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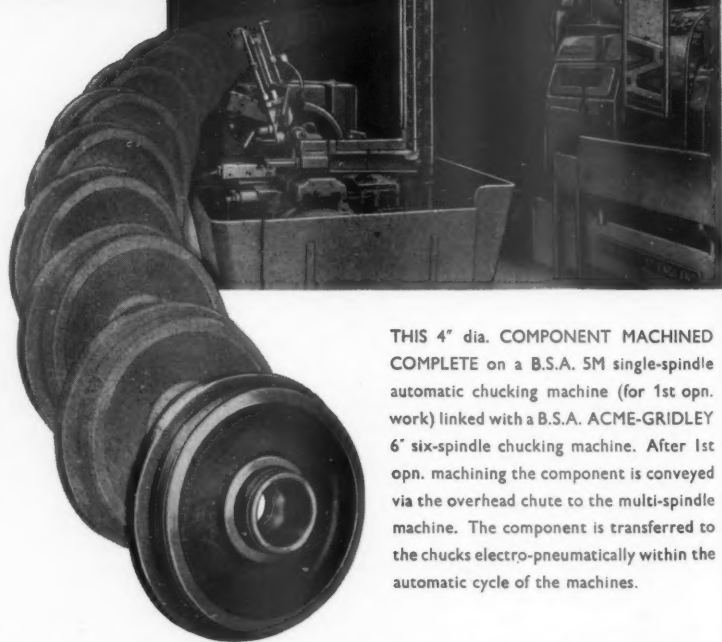
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[No. 7

CONTENTS

| | PAGE |
|--|------|
| Editorial Notes | 177 |
| Higher Fares Authorised | 179 |
| International Diesel Passenger Services | 179 |
| London Transport in 1956 | 180 |
| The French National Railways in 1956 | 181 |
| Letters to the Editor | 182 |
| The Scrap Heap | 183 |
| Overseas Railway Affairs | 184 |
| Plans for a Trans-Saharan Railway | 187 |
| High-Speed Diesel-Electric Trains for International Services | 190 |
| Personal | 193 |
| New Equipment and Processes | 196 |
| News Articles | 198 |
| Notes and News | 202 |

Prices, Productivity, and Incomes

THE great merit of the new Council on Prices, Productivity, and Incomes set up by the Government is its obvious impartiality. Even the most extreme type of politician or trade unionist would hesitate to claim that a council with Lord Cohen, a Lord of Appeal who has special knowledge of economic matters, as its chairman, and Sir Dennis Robertson, a prominent economist, and Sir Harold Howitt, an accountant experienced in matters relating to wages, as its members, represents any sectional interest. The duties of the Council, as announced by Mr. Peter Thorneycroft, Chancellor of the Exchequer, in the Commons on July 25, will be "having regard to the desirability of full employment and increasing standards of life based on expanding production and reasonable stability of prices, to keep under review changes in prices, productivity, and the level of incomes (including wages, salaries and profits) and to report thereon from time to time." Apart from this direction, the Council will be left to its own devices. Reports are to be made direct to the public, not to the Government, and although it will be given all the information it requires by the Government it will be free to criticise Government policy as it thinks fit. The main purpose of the Council is to provide information and comment, free from bias, on the matters within its terms of reference. This will serve as guidance for trade unions, employers, arbitration courts,

and so on, but will in no way be binding on any party or interfere with established machinery of negotiation. Put shortly, it will speak plain common sense on matters too often bedevilled by political and sectional interests. Its reports should be particularly valuable to the British Transport Commission and railway trade unions, which have had the misfortune in the past to be near the beginning of each turn of the wages spiral.

W. R. Oaten

THE death of W. R. Oaten is felt not only in this office, where he gave both valuable help and a general air of happiness over the last few years, but also in that diminishing circle of men who held high positions on the old Indian railway systems. His was a pleasant and genial personality; but in earlier days he could be most direct and forthright. He always said he needed to be; for though he joined the South Indian Railway more than 30 years ago, and finished his service as chief mechanical engineer of that line, he was not of railway family or training, and was looked upon askance by entrenched elements. He was out of industry, originally not even locomotive industry, and was probably the first production engineer ever appointed to hold any authority on an Indian railway. Largely at the instigation of Bruce White (now Sir Bruce), he went from what was then the only mass-production locomotive builder in England—Armstrong Whitworth—and he was one of the band of notable personalities such as McColl, Hyde, Howell, Ben Irving, Matthew Blacklock and Robert McKean who served the Elswick and Scotswood works in their 17 years of locomotive building. Oaten made very striking reductions in the then current time of days out of traffic for heavy overhaul, being backed up by his general managers, such as the late Sir Percy Rothera, often against the wishes of chief mechanical engineers and works managers.

L.T.E. Lightweight Tube Stock

THE London Transport prototype tube train, the first of three to go into service shortly on the Piccadilly Line, and referred to elsewhere in this issue, incorporates many features which have been found successful in service, and have been combined to provide easier, cheaper, and less regular maintenance. The introduction of unpainted light-alloy panelling results in a saving in weight with consequent reduction in energy consumption; a saving in some 3 cwt. of paint per car with a corresponding saving on subsequent overhauls, and lower cleaning costs. The design of the bogies closely follows that adopted on two advance prototypes; these have already seen about 100,000 miles in passenger service under 1938-type tube stock motor coaches on the Piccadilly Line without any trouble being experienced or need for modification revealed. The system of springing, using rubber in combined shear and compression for both bolster and axlebox suspension, has been developed in collaboration with Metalastik Limited. The large number of wearing parts associated with conventional steel springing are eliminated. Hydraulic shock absorbers are used to damp out vertical and lateral oscillations.

Metrovick Electric Locomotives for New South Wales

PLACING in service of some of the 40 3,820-h.p., 108-ton Co-Co locomotives being supplied by the Metropolitan-Vickers Electrical Co. Ltd. for the Parramatta-Lithgow 1,500-V. electrification extension of the New South Wales Government Railways, referred to in our issues of July 5 and August 2, is resulting already in operating economies and acceleration on that difficult route. The six traction motors give a starting tractive effort of 61,000 lb. The resistor ventilator fans are designed to start blowing one min. after starting and to stop three min. after all resistance has been cut out. The control scheme uses electro-pneumatic switches operated at 120 V.; transitions from series to series-parallel and from series-parallel to full-parallel are by the short circuit

method, while transitions from parallel to series-parallel, and series-parallel to series use the open circuit method. The starting resistance is cut out in 19 stages in the series connection, in 18 in series-parallel, and in 17 stages in full parallel. Five extra running speeds can be obtained in each combination by weakening the motor fields, giving a total of 18 economical running notches.

London Airport Rail Link

PLANs for the building of a rail link between Victoria Station and London Airport are given added urgency by the recommendations of the Millbourn Committee for the development of London Airport, which were submitted to Mr. Harold Watkinson, Minister of Transport & Civil Aviation, recently. The committee, headed by Sir Eric Millbourn, did not study the rail link in detail—this is being done by a committee representing the British Transport Commission and the two air corporations—but the report makes it clear that detailed planning of the Central Area of London Airport cannot be carried out until a decision on the rail link has been made. The cost of such a link is estimated at £16,000,000 and the route suggested is from Victoria to Barnes via Clapham Junction, then to Feltham via the Hounslow route, and thence into the airport by a tunnel passing under the Great South-West Road. Trains would take some 22 min. on the journey. It seems probable that the railway would very soon be a profitable undertaking as the Millbourn Committee considers that London Airport will be working to capacity within a few years.

Overseas Railway Traffics

OPERATING revenues of the Canadian National Railways for June amounted to \$61,069,000. Expenses, taxes and rents totalled \$61,860,000 resulting in a net operating income deficiency for the month of \$791,000. In June, 1956, operating revenues were \$64,864,000; expenses, taxes, and rents were \$58,789,000 and net operating income was \$6,075,000. Canadian Pacific Railway revenues for the same month were \$44,343,037 (against \$43,679,905 for June, 1956) and railway expenses \$39,409,143 (\$39,197,100) so that net earnings were \$4,933,894 (\$4,482,805). Aggregate net earnings from January 1 were \$15,145,080 (\$15,470,376). Costa Rica Railway receipts for June were colones 2,079,792 compared with colones 1,690,084 for June, 1956, an increase of colones 389,708. The aggregate receipts for the year ended June 30 were colones 20,204,891, a decrease of colones 211,923 compared with the previous year. International Railways of Central America net revenue from railway operations in June was \$182,041 compared with \$254,989 in June, 1956, a decrease of \$72,948.

Railway Through the Sahara

THE decision of the French Government, taken during the Occupation of France in 1941, to authorise construction of a railway line running south through the Sahara to link the North African Mediterranean ports with the banks of the Niger must rank as an act of faith of the highest order. Forced by circumstances to use old—in many cases worn-out—material, the administration yet pushed a workable standard-gauge line from Kenadsa, the terminus of the section built up to 1941 to link with the Moroccan line from Oujda to Bou-Arfa, southwards until the Allied landings in 1942 stopped work when the rails were 31 miles from Colomb-Béchar. At the moment, 171 miles of line are in operation and serve a number of industrial establishments, including the coal mines of Ksi-Ksou. The importance of the railway, however, lies in the potential traffic of this apparently unpromising region. Recent prospecting has shown important mineral deposits to lie beneath the desert and there are plans for irrigation which could result in heavy agricultural traffic. In an article elsewhere in this issue, M. Paul Depret, Director-General of the Mediterranean-Niger Railway, describes operation and discusses traffic prospects.

Good Running

THE Western Region is to be congratulated on the run of the 8.45 a.m. down "Bristolian" on August 8, when that train, made up to some 350 tons by the addition of three vehicles (for a special party) to its usual 245-ton, seven-coach formation, covered the 118.3 miles from Paddington to Bristol Temple Meads via Bath in 99 min., or in 6 min. less than the schedule. Special credit is due to the Mechanical Department, including the Old Oak Common crew of the "King" class engine No. 6019, *King Henry V*, but clearly the Operating Department was responsible for a clear path; and speeds almost as high as those necessary to give the average of 71.7 m.p.h. on this occasion are commonplace in the Region and on the main lines of other Regions of British Railways, which shows the high standard of track laying and maintenance. Although a little extra effort may have been made last week to improve on the very creditable 105-min. schedule, good performance of this sort, when loads are increased, is typical of the best performance in Britain today.

End of the D.N.G.R.

AMONG the provisions of the British Transport Commission Act, 1957, which received the Royal Assent on July 31, is the dissolution of a small undertaking with an unusual history, the Dundalk, Newry & Greenore Railway Company. Promoted with the support of the London & North Western and the Irish North Western Railways during the 1860s with the object of developing through traffic between the two countries in conjunction with a Holyhead-Greenore sea route, the venture, for a variety of reasons, never proved profitable, and its usefulness was eventually stultified by the political situation arising from the partition of Ireland, whereby part of the D.N.G.R. was left in Northern Ireland, and part in the Republic. Upon the British Transport Commission, as successors to the L.N.W.R. and L.M.S.R. in the ownership of the share capital, there devolved the eventual decision to close down the railway and steamer service at the end of 1951, since when unavoidably protracted legal and other processes were required to secure the abandonment of the undertaking, the disposal of claims, and the realisation of assets. For these purposes the continuation of the company has been a legal necessity until recently, the last Chairman being Mr. E. S. Hunt, who until the end of last year was Assistant General Manager, London Midland Region.

A Disturbing Story

COLONEL D. McMULLEN'S report, summarised in this issue, on the collision on November 22, 1956, at Newlay & Horsforth, when the guard of the first freight train was killed, reveals a very serious state of indiscipline among the signalmen and leaves one with a feeling that the condition may be unpleasantly prevalent. The accident was brought about by misuse of the rotary interlocking block, installed on the route by its one-time owner, the Midland Railway. The co-operative cancelling facility was resorted to irregularly under a false impression, engendered by the entering of incorrect particulars in one train register and failure to make a vital one in another, strengthened by want of care and common sense and inattention to rules. Careful checking of the books, at Colonel McMullen's request, showed a considerable number of irregularities to have been committed during the preceding four weeks, including even fictitious entries, corresponding to no train at all. There had been also some irregular signing on and off duty.

Origin of the Rotary Block

THE rotary interlocking block, adopted by the Midland Railway on a considerable scale after the Hawes Junction (now Garsdale) accident of December 24, 1910, came from equipment introduced by W. E. Langdon in 1884, used principally for tunnel sections. His object was

to retain the existing single-needle block, with its "dial signal" facility, and add electric lever locking and treadle control over the release of the "train on line" indication. Fastening the instrument handle at "line clear" brought extra battery power into the circuit to lift the lock at the signalbox in rear. Emergency release contacts were contained in glass-protected boxes with no co-operative action. The rotary handle on the accepting or "pegger" instrument was introduced apparently in 1908 and co-operative "line clear" cancelling was seen in the improved design applied not long after and used on several hundred block sections. The remedy for such blundering as occurred at Newlay is to lock the cancelling apparatus itself absolutely once something has entered the section, as seen in modern single-line interlocking block equipment.

Higher Fares Authorised

THE Transport Tribunal announcement on August 7 that it had decided to confirm, with immediate effect, the recent application by the British Transport Commission to increase fares on British Railways London Lines and London Transport, and to increase early morning fares and season ticket rates outside London by amounts similar to those applying in London, shows how great was the care with which the Commission prepared its case. Despite the numerous objections heard at the public inquiry before the Tribunal, there is only one alteration to the Commission scheme—the deletion of the proposal to make a maximum fare of 5d. apply on the London, Tilbury & Southend line for any distance between one and two miles. This would have been an exception to the proposed fare scale of 3d. for one mile, 4d. for 1½ miles, and 5d. for two miles. The authority granted by the Tribunal includes the retention of the minimum fare of 3d. for London Transport, originally raised from 2½d. under authority of the Hydrocarbon Oil Duties (Temporary Increase) Act at the time of the Suez crisis, and now generally known as the "Suez halfpenny." The authority for this increase under the Act lapsed on April 23 last, but it has been continued by permission of the Transport Tribunal pending the outcome of the application now settled. The yield of this extra ½d. on the minimum fare was estimated in April by Sir John Elliot, Chairman of London Transport, to be some £2,000,000 a year.

The Commission has announced that, as was indicated when its application was first submitted to the Tribunal, it will not make any immediate increases in fares—that is, "during the present holiday season." A further statement is to be made in due course and it seems likely that any fare increases which may be thought necessary will coincide with the introduction of the winter timetables next month. This allows passengers to travel at existing fares during the remainder of the summer, when traffic already is at a high level. The Commission has a certain amount of "headroom" as far as ordinary fares on British Railways are concerned, the authorised fares being 2d. a mile second class and 3d. first class against actual charges of 1·88d. and 2·82d. a mile respectively. Before the present scheme was approved there was no corresponding headroom on the permitted maximum for season ticket rates and early morning fares. Details of the increases proposed were given in our issue of April 19 last.

The need for fare increases, though regrettable, is only too apparent. As was stated at the inquiry, British Railways have experienced recently cost increases resulting from wage awards and rising prices of materials amounting to some £25,000,000 in a full year. A working deficit of £35,000,000 is expected for British Railways in the current year, or £75,000,000 with the addition of central charges. In such circumstances the need for additional revenue is plain, and some years must pass before the modernisation plan can make really substantial contributions to revenue. London Transport expenses rose in the same period by £4,300,000 a year, and although a saving of £700,000 a year has been achieved by various economies

and rationalisation a deficit of £3,600,000 would be incurred if fares were not raised. The proposed fare increases are expected to yield £4,500,000 to London Transport, giving a margin of £900,000 a year. The yield to British Railways cannot be assessed until it is known what increases it is proposed actually to impose—a question which the Commission now has under review. The position is complicated by the effect on revenue of traffic—both passenger and freight—which was transferred to British Railways during the period of petrol rationing and diesel fuel control, and also of the commencement of new charging methods under the maximum charges scheme which came into force last month. These exceptional matters must make it hard to assess a true average level of freight revenue and therefore the amount of passenger revenue needed to balance the rise in costs. The value of headroom on passenger fares in these circumstances is clear.

One type of fare which the Commission regards as an anachronism in present-day conditions is the early morning fare. It is arguable that present social conditions have so levelled incomes that there is no longer any real necessity for a "workman's" fare, of which the early morning fare is, in effect, a continuation, and it is probable that a sample analysis of incomes of passengers travelling by trains starting in the London area between 7 a.m. and 9 a.m. would show that there was little difference between the earnings of passengers on the various trains. As Mr. B. H. Harbour, Member of the London Transport Executive, stated before the Transport Tribunal last May, it is the Commission policy to move progressively towards the elimination of early morning fares, some of which—particularly those for longer distances—are regarded as "quite unrealistically low."

It is important to remember, as regards ordinary fares on British Railways, that the present fares are still less than double those obtaining immediately before the war, and thus have risen far less than prices in general.

International Diesel Passenger Services

AAMPLE opportunity will have been had by delegates from the chief railways in Europe and the Near East, who meet in Naples in October at the 1957 European Timetable & Through Carriage Conference to decide on international services in the 1958 summer and 1958-59 winter passenger timetables, for study of the running and financial results of the principal innovation in the current summer service—the series of fast international diesel trains known collectively as "Trans-Europe Expresses" (T.E.E.). An article on another page describes some of the first of the T.E.E. sets to be built—constructed to the joint account of the Netherlands and the Swiss Federal Railways by Dutch and Swiss builders, which are working on fast schedules over the east and west sides of a triangle Zürich-Amsterdam-Paris.

The T.E.E., which are first class only, certainly offer something new in the way of speed and comfort. Some of the schedules allow of an early start from and late evening arrival back in a large business centre, with the best part of a day for business at the destination. The seating is conveniently arranged. In the four-car sets described there are 114 revenue-earning seats, 60 in open and 54 in side corridor stock, and 32 seats in the kitchen/restaurant car (with catering by the Wagons-Lits Company)—which certainly adds to the pleasure of the journey for those many passengers who dislike taking meals at their ordinary seats. The sets are fully air-conditioned with Stone-Carrier equipment, which much increases the comfort of journeys, particularly when these are made mainly on business, and, for a considerable part of the year, in darkness, so that there can be no desire, as with many tourists travelling in temperate climates, to open windows.

The intensive use of these sets, and speeds maintained are remarkable. The top designed service speed is 140 km.p.h. (87 m.p.h.), but desired performance includes starting on a 1·6 per cent (1 in 62) gradient and attaining

a speed of 70 km.p.h. (43½ m.p.h.) within 180 sec. This combination of high top speed and good uphill and acceleration performance is needed to cope with fast running over nearly level tracks in Holland and France, and reasonable uphill speed on the Ardennes main line of the Belgian National Railways. The summer timetable roster for these sets is a four-day one: (1) Zürich dep. 11.45, Amsterdam arr. 21.48; (2) Amsterdam dep. 13.27, Paris arr. 19.01, dep. 20.48, Brussels arr. 23.33; (3) Brussels dep. 7.45, Paris arr. 10.33, dep. 17.45, Amsterdam arr. 23.18; (4) Amsterdam dep. 11.10, Zürich arr. 21.25. The fifth day, the unit is considered to be out of service for inspection and maintenance at the Zürich depot of the Swiss Federal Railways. Distances covered in each of the four working days are 560, 535, 535 and 560 miles, giving a total of 2,190 miles in five days, equivalent to 13,140 miles in a full 30-day period with 100 per cent availability.

A possible objection to the high-speed multiple-unit set, whether it be diesel-electric, diesel, or "straight" electric, appears to be its lack of elasticity as regards accommodation—the inability to add stock as required. This is not, we feel, a valid objection. The trains are constructed, rather than an aircraft is constructed, for a certain traffic or group of traffics, and to add vehicles might well disturb catering arrangements besides imposing a strain on motive power. There are and will still be plenty of locomotive-hauled trains over the same routes, capable of strengthening with additional vehicles as required. With development of dual-voltage techniques in electric traction, T.E.E. in future may be electrically powered, as electrification is extended by the European railways at their several voltages.

Examination of this summer's running and results may well prove useful to British Railways in consideration of the rather similar high-speed diesel train services planned between London and some principal centres.

London Transport in 1956

THE intensity of peak-hour travel on London Transport services in 1956 showed little change, but the falling trend of traffic as a whole, which first became apparent in 1948, has continued, and the number of passengers fell by 4.4 per cent compared with 1955, although, reckoned by passenger-miles, the fall was limited to 2.6 per cent. One of the reasons for this, according to "London Transport in 1956," the annual review of operations issued by London Transport, is the increase in the minimum fare from 2d. to 2½d. at the beginning of the year. This increase achieved its object of producing net additional revenue but caused a reduction in the number of passengers. There was increased competition also from private motorcars, motorcycles, scooters, mopeds, and other forms of private transport. The weather of 1956 was worse than in the previous year, thus reducing pleasure traffic, and the spread of television kept more Londoners at home in the evenings. The drop in passengers occurred entirely on bus and coach services and outside the peak periods. On the Underground there was some increase in traffic.

In his introduction, Sir John Elliot, Chairman of London Transport, points out that the difficulties of London Transport are really London's difficulties, too, for its problems are in the main those of "securing the effective functioning, from much more than a 'movement' point of view, of London as the capital city, and of its surrounding suburbs, new towns, and busy countryside." Copies of the review are being sent to all Members of Parliament in the London Transport area, all local authorities, and to every senior member of the London Transport staff. In a personal letter to each of the staff, Sir John Elliot says: "I would again emphasise that our main purpose in life is to carry passengers. All else is of secondary importance, and if we are to keep going in the highly competitive world in which we now live, we must do all in our power to maintain and improve the standard of service we offer to Londoners."

The continuing intensity of peak travel underlines the need for a greater staggering of working hours to ease

travel in the peak periods, the review states. Some evidence of a voluntary staggering of hours was shown during the Suez petrol crisis in response to appeals by the special staggering committee set up by Mr. Harold Watkinson, Minister of Transport & Civil Aviation, but present peak-hour travelling conditions, which are likely to intensify with the new office development foreseen in Central London during the next few years, make staggering of working hours more necessary than ever. Some 32 per cent of Central London workers stop work at 5.30 p.m. compared with 13 per cent a quarter-of-an-hour earlier and only 5 per cent a quarter-of-an-hour later. There are only two alternatives, the review claims, if nothing is done to change this situation. Either a great network of new rail and road facilities can be provided, at prohibitive cost, which will be fully used only in the few short peak hours and lie idle throughout the rest of the day and have to be paid for by higher fares; or increasing overcrowding will have to be endured. The first, London Transport states, "is obviously out of the question; the second ought not to be entertained."

The greatest continuing long-term threat to the prosperity of the public transport services, in the future as in the immediate past, is stated to be private motor transport. The number of motorcars in London increased by 10 per cent in 1956 and 16 per cent in 1955. By the summer of 1956 one in every 3½ households in London possessed a motorcar, to say nothing of motorcycles and scooters. It is estimated that nearly half the net fall in passenger-miles in the London Transport area between 1950 and 1955 may be attributed to the growth of private motoring. Even the present number of motorcars may well double in the next eight years. At the end of 1956 television sets were possessed by 48 per cent of households within the London Transport area, compared with 42 per cent a year earlier. The loss of traffic by competition from television, like much of the far greater loss due to private motoring, is the more serious because it mainly affects the valuable off-peak traffics.

Basing its estimates on a study of new office accommodation built to date and on planning permission granted for future building up to the beginning of 1956, London Transport considers that the present working population of the City and West End is likely to increase over the next 15 years by about a sixth, from 1,200,000 to 1,400,000. The extra demand which this increase will gradually impose on the services will make the proposed new Victoria Line more necessary than ever. If the line were built, the increase envisaged could in general be met by London Transport without giving cause for great concern. If the line were not built, piecemeal remedial works on the Underground would be necessary at heavy cost, although they would be of much less benefit to London.

The total net revenue surplus of London Transport from all sources for 1956 was £4.5 million. This sum fell short by £1 million of meeting the £5.5 million which represents the London Transport share of the annual interest on capital and other central costs of the British Transport Commission. To this extent London Transport did not pay its way.

Passengers on London Transport railways rose from 675,537,000 in 1955 to 677,909,000 in 1956—the only section of the London Transport undertaking to show an increase in traffic, but passenger-mileage fell from 3,469 million to 3,413 million. During the year, the decision was taken to complete the scheme for four-tracking the Metropolitan line between Harrow-on-the-Hill and Watford South Junction and to extend electrification from Rickmansworth to Amersham and Chesham. Work on this latter scheme actually started in 1939 but was suspended on the outbreak of war. Work will start again next year and should be completed in 1961. When the scheme is completed, the four stations beyond Amersham—Great Missenden, Wendover, Stoke Mandeville, and Aylesbury—will be served exclusively by British Railways. The six-mile line between Epping and Ongar is being electrified and will enable London Transport's last steam shuttle service to be withdrawn and be replaced by two-car electric

trains. A new rolling stock depot is being built at Upminster in association with the British Railways plan for electrification on the London, Tilbury & Southend line. Under this scheme, local and fast lines between Bromley and Upminster will be segregated for operation and maintenance purposes at the end of 1960, London Transport assuming responsibility for the local lines. There were also important improvements to stations and to signalling installations, including the introduction of centralised signalling control by the London Transport pre-selective press button system on the section of the Metropolitan and widened lines from a point north of Farringdon to Liverpool Street. This is the fourth and largest of such installations.

These and other railway schemes, and road service developments on a similar scale, show that London Transport is sparing no pains to give efficient service to Londoners. Its attitude may be summed up in Sir John Elliot's own words: "The 10 million people living within this great area deserve the best public transport in the world. It is, and always has been, our aim to provide it."

The French National Railways in 1956

THE French National Railways have done well to produce a booklet outlining the main features of their progress in 1956. Entitled "Activity and Productivity of the S.N.C.F. in 1956," this publication, with an introduction by Monsieur Charles Boyaux, the Director-General, sets out succinctly and clearly the developments and technical progress achieved last year. Replete with graphs, some diagrammatic maps and a series of statistical tables drawn up with care, the story is one of which those responsible for the S.N.C.F. management must feel justifiably proud. The annual reports of large nationalised railways inevitably take some months to prepare and, in many cases, they must first be presented to the Government before being accorded public circulation. The issue, soon after the close of a year's working, of a booklet of this character, telling of worthwhile achievements and giving a forecast of results, might well prove a model for the larger railways in other countries.

In view of the intense economic activity in France during 1956 it does not occasion surprise that the French Railways were able to establish certain records. Despite ever-growing road and air competition, passenger traffic, measured in terms of passenger-km. at 29,700 millions, exceeded the 1938 figure by 34 per cent and virtually equalled the all-time record of 1925. Freight traffic measured in net ton-miles, at 50,300 millions, registered an increase of no less than 90 per cent over 1938 and was 20 per cent above that of 1929, the record prewar year. Taking passenger and freight traffic together, there was a rise of 7.2 per cent over 1955, 64.8 per cent over 1938 and 14.4 per cent over 1929. Yet this greatly increased traffic was handled satisfactorily with a staff reduced to 365,000, a fall of 9,000 compared with 1955. Staff figures in respect of 1946 and 1938, though quoted in the booklet, are not entirely comparable, as the number of employees of the S.N.C.F. was affected by special factors. Nevertheless, such considerations in no way detract from the fine showing in improved productivity per unit of staff, measured in terms of km.-units per employee-hour, a figure which rose from 92.7 in 1955 to 102.1 in 1956.

Contributing factors to the greatly improved efficiency have been the extension of electrification and diesel traction, though steam traction has not been neglected, with the result that, per kg. of coal equivalent, the number of km.-units has risen from 5.17 in 1938 to 10.81 in 1955 and attained 11.18 in 1956. It is calculated that the saving of coal for traction purposes, contrasting 1956 with 1938, is in the nature of 8,000,000 tons, and this saving is of immense national importance.

The booklet sets out the electrification projects completed in 1956 and those in progress, some of which will be finished this year. The various schemes have been recorded in our columns. Mention must, however, be made of the speed and energy with which such conversions

to electric traction are planned and carried through. As to diesel traction, 40 per cent of passenger train-km. was operated by diesel railcars in 1956, and 2,000-h.p. diesel locomotives moved heavy freight trains on the Paris Grande Ceinture line.

In other spheres may be mentioned the extension of long-welded rails (3,125 km. were so equipped by the end of 1956); the increase in colour-light signalling; automatic protection at level crossings; and the completion of passenger station reconstruction at some 20 railway centres, such as Mulhouse and Poitiers. A good deal might be said about the admirable charts and statistical tables, which relate primarily to traffic handled and operating results.

A word of warning appears in the section covering productivity. It is pointed out that, with the intense increase of traffic, the S.N.C.F. is now working close to saturation point and that within recent months there has been a noticeable increase in train delays, motive power failures, and other troubles. As a consequence it is essential to proceed actively with the third Plan of Modernisation and Re-equipment. The fine record of the S.N.C.F. during the last 10 years should stand it in good stead to meet any difficulties it should be called upon to face.

Railway Freight Traffic to June, 1957

(By a correspondent)

THE official index of "all industries production" shows that in the first quarter of 1957 the output of goods remained at the 1956 level, while it improved considerably in the second quarter. Despite this burst of industrial activity on the part of the steel industry, cotton spinning, motorcar manufacture, and other important trades, British Railways lost ground as freight carriers towards the close of the last half year. In four weeks to June 16 they originated only 20,666,000 tons of freight train traffic, a decrease of 345,000 tons, or 1.6 per cent, from 1956 and 1,904,000 tons, or 8 per cent, below the corresponding period of 1951. The loss of 397,000 tons of coal and coke, or 3.1 per cent, cancelled small gains of 31,000 tons in merchandise and livestock, and 21,000 tons in minerals. The advance statement of freight receipts for the four weeks to July 14 indicates a further heavy loss of coal tonnage, a substantial decrease in merchandise carryings, and a slight recession in minerals. The position of our railways will become critical if these downward trends continue in the second half of the year.

OPERATING STATISTICS

No. 6 of *Transport Statistics* gives certain operating statistics for the 12 weeks from March 25 to June 16, but does not state the tonnage handled or the net ton-miles worked in that time. British Railways seem to have originated 62,898,000 tons of freight train traffic, 1,198,000 fewer than in 1956, or 1.8 per cent, and to have worked about 4,793 million ton-miles, about 221 million less, or 4.4 per cent. The higher rate of decline in ton-miles is explained by a shorter haul of one mile for merchandise, of three miles for minerals and two miles for coal and coke.

It is odd that 26,635,000 loaded steam train-miles were found necessary to move the diminished volume of traffic—96,000 more than in 1956; empty steam train-miles were, however, reduced by 94,000, or 2.3 per cent, to 4,007,000. The London Midland Region saved 54,000 loaded and 75,000 empty train-miles. This reduction of 129,000 train-miles, or 1.5 per cent, was possible through a drop of 105,000 in loaded wagons forwarded, or 4.9 per cent.

These figures compare with an all-line decrease of 195,000 loadings, or 2.7 per cent. Wagon miles worked by all Regions totalled 909,226,000, the percentage of loaded miles rising to 70 and the decrease from 1956 being 32,807,000, or 3.5 per cent. The corresponding figures for the L.M. Region were a total of 279,529,000 wagon-

miles, a percentage of loaded miles rising to 71 and a decrease from 1956 of 16,235,000, or 5.5 per cent.

The all-line average wagonload at starting point increased by 1 per cent to 9.5 tons. Averages of 12.9 tons for minerals and 12.6 for coal and coke were well above last year's figures, but the merchandise average was held down to just over four tons by poor loading in the L.M. Region, which despatched 786,000 wagons, about 30 per cent of the total number, carrying on an average 3.78 tons, 3 per cent below the 1956 load and further below 1955. Wagon user in the Region must be excessive.

The trainload dropped from 162 to 155 tons, Regional figures varying from 109 tons in the Scottish to 150 in the Western, 151 in the North Eastern, and 176 in the L.M. and Eastern Regions. The hours of freight train engines in traffic were reduced by 76,000, or 2.3 per cent, and the hours of shunting engines by 62,000, or 1.8 per cent. In these circumstances an advance in freight train speed from 9.32 to 9.56 m.p.h. was rather puny. The Scottish Region had the highest speed of 11.15 m.p.h., followed by the North Eastern with 10.33. The Eastern did well to move its heavier train at 9.75 m.p.h. compared with the London Midland slow movement of 8.5 m.p.h., fully a mile an hour behind the Western Region rate of progress.

These changes in loading and speed combined to reduce the system's output of freight train operation from 1,239 ton-miles per engine-hour in 1956 to 1,211, or by 2.2 per cent. The Eastern Region was easily the most productive, turning out 1,442 ton-miles in an engine-hour, 103 more than the modified N.E. area produced, 203 above the L.M. return of 1,208 and nearly 30 per cent better than the Western result. Turning to another measure of mobility—wagon-miles per train engine-hour—the all-line

statistic receded from 233 to 229, while the Eastern again headed the regional list with 255. The N.E. was 10 points behind and the London Midland 28, while both the Southern and Scottish Regions, with returns of 222 and 220 respectively, came in ahead of the Western which worked only 208 wagon-miles in a train-hour.

FREIGHT ROLLING STOCK

In mid-June the rolling stock position did not show any change in pattern from a year ago. Of a net operating stock of 17,012 steam locomotives 2,518, or 14.8 per cent, were under repair. Of 111 diesels (mechanical and hydraulic) 9 were out of action and of 549 diesel-electric locomotives 50 were unserviceable. An under-repair percentage of about 9 for these new costly machines is double what one would expect to find. The state of the growing stock of diesel multiple-unit passenger carriages is no better, 77 out of 822 not being fit for service.

It seems to have become a standing arrangement to have five out of a fleet of 70 electric locomotives laid aside on the date of each quarterly stocktaking, a poor showing for machines which their makers regard as robust.

Wagons needing repair accumulated to 75,908 in June, about 230 less than in the previous summer and 6.8 per cent of the stock of 1,101,340. Recently there has been a surplus of wagons, so far as can be judged by general statistics; but it would be useful if British Railways issued a quarterly statement on wagon supply. The Association of American Railroads compiles an informative bulletin each month at the request of the Shippers Advisory Boards which is an admirable piece of publicity. They order this matter better at Washington, D.C.

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

British Railways Passenger Coaches

August 7

SIR,—The articles in your issues of July 12, 19, and 26 describing the British Railways prototype coaches are most interesting. One is struck by the difficulty coach designers in this country seem to have in producing a vehicle notably different from the designs of the late 1930s, which have set the pattern in Britain for so long.

In their day, these coaches were a great improvement on the typical railway "carriage" of the 1920s. But their day has passed, and no amount of dressing up with plastic panels, fancy reading lamps, and redesigned head-rests will make them into coaches appropriate to the new era in rail transport. Neither is the inclusion of a gimmick such as a ladies' powder room enough in itself to make a coach "modern." It is disturbing, also, to hear that passengers are being asked to give their views on the question of roomier compartments, especially in first class. Little credit can be claimed for making such an improvement, as most prewar first class compartments had certainly more leg room than the present standard coaches of British Railways.

The long-distance passenger, in particular, in whatever class he travels, should be given: (a) a very smooth and quietly running vehicle; (b) a really comfortable seat in which he can relax by day or night; (c) automatic heating and ventilation (as opposed to present-day hit or miss methods of roasting, suffocation, or freezing and which usually puts other passengers at the mercy of those who have a commanding position over the window or heater control); (d) well-diffused, but not harsh, night illumination; (e) tasteful but not elaborate decoration, making best use of modern materials, especially plastics and alloys (decoration to have less priority than smooth riding, good ventilation and seating comfort as regards cost); (f) wider external doors for easier access or exit—if outward-swinging doors cannot be made wider, then some other alternative should be tried.

Cravens Limited is to be congratulated on a design which at least points in the right direction, especially on having dispensed with the standard British Railways coach window and its fiendish draughts.

Yours faithfully,

R. W. JAMES

18, Westdene Crescent, Caversham, Reading

Closing Unremunerative Branch Lines

August 4

SIR,—In your editorial article in your July 12 issue on the East Grinstead—Lewes branch and the agitation over its closing, you comment that, although British Railways have provided an adequate service, the public have made little use of it. The "adequate service" is the bare minimum enforced by the Act and British Railways, in their apparent petulance at not being allowed their own way, have not even reopened the two stations (Kingscote and Barcombe not mentioned in the Act).

Secondly, the first train leaves Lewes for East Grinstead about 9 a.m. and the last train arrives back from East Grinstead at Lewes about 5 p.m., so that the service is entirely useless for any passengers working or going to school in Lewes, Brighton, and so on, who would surely provide most of the traffic.

Yours faithfully,

H. L. HAWKER

10, Sloane Gardens, S.W.1

[The case for closing the lines does not rest on the results of operating the present minimum "statutory" service, but is based on experience of the service which was in force until the line was closed in 1955; this seems to have catered adequately for local workpeople, school-children, and day visitors to Lewes, Brighton, and other towns; but it was poorly patronised.—ED., R.G.]

THE SCRAP HEAP

Digest of Evidence

A student stopped by a ticket collector wrote a false address in an inspector's notebook. Then he snatched the page, chewed and swallowed it. At Marlborough Street police court (London) he was fined 20s. for travelling with intent to avoid paying his fare.—From the "Daily Mail."

Lion's Interest in C.T.C.

A Rhodesia Railways Signal & Telegraph technician on call out duties encountered a lion at the points at Mukwa Siding. It refused to retreat even after stones had been thrown at it. The technician concerned was seated in an open C.T.C. motor trolley and was far from happy. Finally the lion ambled off and our hero commenced testing in the C.T.C. hut. On leaving the hut, however, he found that the lion had returned and was behind the engine room. It later proceeded to walk round his motor trolley with some interest, and then went on its way.—From "Rhodesia Railways Magazine."

Not a Quorum

The North Eastern Region has found it impossible to grant the request of a local resident to have a halt erected at Newbiggin, Eskdale, on the Whitby-Pickering line on the Yorkshire moors, and for certain passenger trains to be scheduled to stop there to take up and set down five schoolchildren wishing to travel to and from Ruswarp and Whitby. Whilst the difficult position is

appreciated of families with children living in outlying places, the Region could not justify the operation of exceptional arrangements of this kind having regard to the work involved, the undesirability of decelerating train services, and the unremunerative nature of the traffic.

Casey Jones's Fireman

The accident that put an end to his railroad days also brought him the certain immortality of any man who gets his name in a folk-song. Simeon T. Webb was, in fact, the 25-year-old fireman who stoked the "Cannon Ball Express" on the night of April 29, 1900, and had the sense to take his engineer's advice and jump, "'cause there's two locomotives that's a-goin' to bump." Yesterday [July 14] in Memphis, Tennessee, Mr. Webb joined his engineer, the one and only John Luther ("Casey") Jones. Mr. Webb died in his bed.—Alistair Cooke in "The Manchester Guardian."

North London Relic at Broad Street

Rebuilding work at Broad Street, London Midland Region, has uncovered the coloured poster reproduced in the accompanying illustration. It is interesting to compare the present timings by electric trains between Broad Street and the stations named, with those advertised in the poster — which shows one of the famous North London 4-4-0 tank engines which invariably worked that railway's passenger trains at that time. The poster



North London Railway poster discovered during renovations at Broad Street

must have been issued in 1909 or later. Mr. (later Sir) Frank Ree was General Manager of the L.N.W.R. from February, 1909, until his death in 1914; he had previously been Chief Goods Manager of that railway. Like other Chief Officers of the L.N.W.R., he held the corresponding position on the North London after 1909, when the L.N.W.R. Chief Officers were made responsible also to the North London Board.

Other relics found during rebuilding of the booking office at Broad Street include old tickets, handbills, folders, and letters in copperplate handwriting.

The Burning Question

All this business about smoking is extremely thought-provoking. And, indeed, the B.M.A. Has some scary things to say. As for smokers on the trains, As the M. of T. explains, They must be accommodated, Though they may be segregated, Which, of course, evokes a wail From those travellers by rail Who regard tobacco's spell As just one more nasty smell.

Many a piquant thought emerges From these smoke-abatement urges. Are not travelling fumigators Potent germ-exterminators, Capable of choking off Everything but smoker's cough? Why ignore the power and scope Appertaining to old rope? Meanwhile, addicts to the habit, Emulating old Brer Rabbit, Lyin' low and sayin' nuffin', Quietly continue puffin'.

A. B.

Dismantling the Meon Valley Line



Photo]

[J. B. Latham

Demolition of West Meon Viaduct, opened in 1903, on the Meon Valley line of the Southern Region (former L.S.W.R.); most of this line is now closed to all traffic

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

INDIA

New Marshalling Yard near Delhi

A new marshalling yard is to be built at Tughlakabad, about 10 miles from Delhi. At present all freight traffic has to pass through either the Delhi Main or the New Delhi yards, creating heavy congestion. The existing facilities at the New Delhi yard moreover have been found to be inadequate for dealing with the increased traffic as a result of greater economic activity in the country.

An advantage of locating a marshalling yard at Tughlakabad on the Delhi-Mathura section of the Central Railway, is that the present congestion in the Delhi and New Delhi yards would be greatly relieved. When the new yard is ready all trains will be marshalled and routed to different directions from there.

VICTORIA

Rebuilding Richmond Station

The new passenger station at Richmond, 1½ miles from Melbourne, is taking shape. Richmond is an important interchange station, the point of separation for the extensive eastern and south-eastern suburban and country lines. The existing station, built about 70 years ago, has become too small for present needs, and is something of a bottleneck.

It is above ground level, with four curved platforms, two of them being islands. The tracks approaching it from east and west are on an embankment, and there are underline bridges at each end.

The main features of the project are: (1) Construction of a new station,

with 10 tracks passing through instead of six as at present, and with five island platforms, to give 10 faces; (2) new bridges across Punt Road at the western end of the present station; (3) five bridges across Swan Street at the eastern end, and demolition of the existing three bridges; (4) three subways leading to the new station; and (5) a retaining wall along the southern side of the new station and along part of the embankment towards South Yarra.

RHODESIA

New Traffic Records : 1956-57

During the year ended March 31, 1957, a further 2,140 high-sided bogie wagons were placed in service on the Rhodesia Railways each capable of carrying a 47½-ton load. In this period the Railways carried 3,602,900 tons of coal and coke from Wankie colliery which is an increase of 319,866 tons over the corresponding period of last year. At the end of March, 1957, the Northern Rhodesia Copper Mines coal dump stood a 167,622 tons and all power stations had a minimum of 18 days' supply. Chrome ore carried during the year totalled 664,800 tons, an increase of 173,443 tons on the year ended March, 1956 and on March 31, there were 173,414 tons on the dump at Beira.

Over the same period the export of copper went up by approximately 43,157 tons to 554,441 tons, while the figures for the transport of tobacco rose from 119,000,000 to 163,000,000 lb. Asbestos and a number of other minerals also showed advances, particularly lithium, which increased from 84,388 tons to 103,200 tons. In addition

517,500 bags of maize and maize meal have been conveyed for export and 110,000,000 gallons of petrol, oil and lubricants were brought into the country compared with 89,000,000 gallons in the 12 months ended March 1956.

General goods traffic continued to rise and there was an increase from 4,387,330 tons to 4,758,500 tons, receipts totalled £14,294,900.

The total net tonnage for all traffic during the year under review was 11,303,200 compared with 10,065,131 net tons in the year ended 1955/56—an increase of 1,238,069 tons.

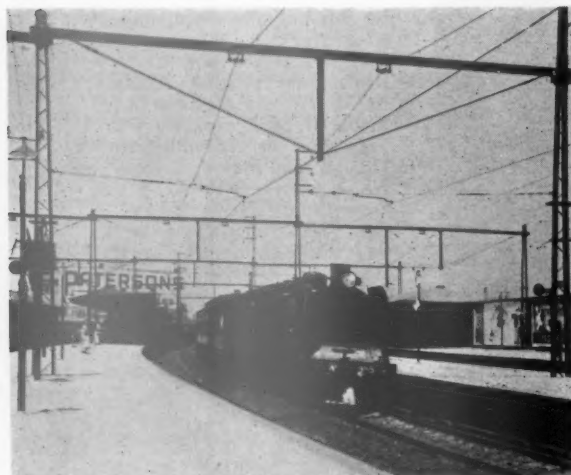
ARGENTINA

Accident to "El Cuyano"

Shortly after leaving Retiro terminus for Mendoza and San Juan on June 26, the last three coaches of the "El Cuyano" of the General San Martín Railway left the rails at a crossover. No passengers were hurt, but considerable damage was done to the track and to signalling installations, as well as to the coaches themselves.

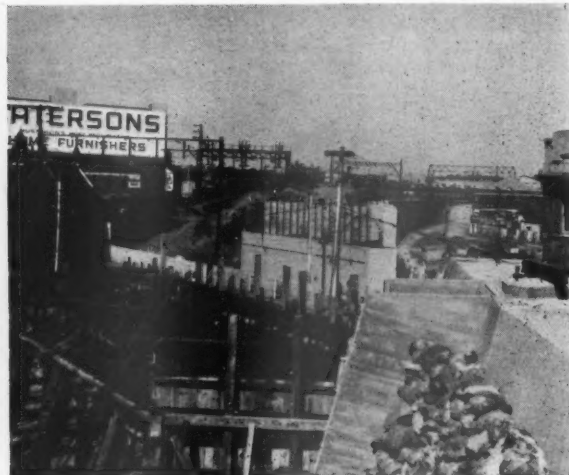
Rationalisation in Rosario

The committee appointed to draw up the definite scheme of rationalisation in Rosario has now presented its report, which supersedes all previous projects and calls for an expenditure of 1,040 million pesos over a period of nine years; 35 per cent of the cost will be financed by the sale of land no longer required by the railways. The first stage, which will be completed in four years, calls for a low level line of two broad gauge and one narrow gauge track, together with the first part of a new



Photos]

General view, looking east, of Richmond Station, Victorian Railways, before reconstruction



[Guy Bakewell

Supports for new bridges over Swan Street at east end of station; existing bridges on left

classification yard for the General Mitre Railway. The second stage, to be finished three years later, comprises: the new central passenger station with eight platforms, bounded by Avenida Francia and Vera Mujica, San Juan and Mendoza streets; and a broad gauge circular line round the city limits, connecting up all incoming lines and the port zone. The final stage, to take two years, will provide all the necessary installations for the General Belgrano Railway. Rosario North, Rosario Central, Villa Diego and the present station of the General Belgrano Railway will all be closed down.

PORTUGAL

Substation for Estoril Railway

Construction has begun of the building at Belem, near Lisbon, on the Estoril Electric Railway, to house a new 1,200-kW. substation for which the rectifier, 10-kV. a.c. switchgear and 1,500-V. d.c. switchgear are being supplied by the General Electric Co. Ltd. This will supplement the existing G.E.C. rectifier 2,400-kW. substation at Paco d'Arcos, which at present supplies the whole of the railway load.

FRANCE

Paris Quai d'Orsay Terminus

Monsieur Bonnefous, Minister of Public Works & Transport, is reported to have pledged his support for a plan for turning the only partially used Gare d'Orsay into a rail terminal for traffic from Orly airport. This project has already been under study for some time,

and is based on the supposition that in 25 years 6,000,000 travellers a year will be using the airport. The cost of converting the Gare d'Orsay, of making the necessary modifications to the line, and of building an underground station at Orly, is estimated to be about £5,000,000. If the plan were carried out, passengers would be carried by fast trains from Orly to the centre of Paris in 20 min.

Long-distance trains of the South-West Region of the S.N.C.F. have been dealt with since the war at Paris Austerlitz (the original terminus of the Paris-Orleans Railway before the extension underground to the Quai d'Orsay), as the platforms at the Gare d'Orsay are too short for any except multiple-unit electric suburban trains.

S.N.C.F. Diesel Lent to R.E.N.F.E.

An S.N.C.F. CC diesel-electric locomotive, DB No. 6, recently completed by Alsthom, has been lent to the Spanish National Railways (R.E.N.F.E.) for a period of six months. Because of the difference in gauge, the locomotive went into the Transfesa works at Cerbère, on the Franco-Spanish frontier, where the bogies were replaced by those of the R.E.N.F.E. (5 ft. 6 in.) gauge. This work was carried out at night to avoid interference with traffic, under the direction of engineers of the Alsthom Company and the S.N.C.F.

WESTERN GERMANY

Repairing Power Frames

Of the 10,000 signalboxes on the Federal Railway, about 1,000 have electric power lever frames, situated, of course, mostly at points of heavy traffic.

As with all apparatus of this kind, wear in the components can, if it does not give rise to actual danger, lead to operating failures and consequent delays. During the war maintenance got very much behind and in some instances difficulties arose from excessive wear, particularly in one form of four-row frame in which the levers—actually rotary handles—are arranged on a flat desk with their shafts vertical, and interlocked mechanically, as in all previous work of this kind in Germany. Various measures have been taken to rehabilitate the different designs of frame, a few examples of which date back to 1901-06, and render them fit for some years more of useful life. To meet the trouble met with in one type, because of the considerable force required to operate the numerous shaft contacts needed in large installations, these have been reduced to a few only and the controls transferred to banks of relays of the latest form, with reciprocal proving contacts, effecting a very great improvement from both the signalman's and the maintainer's point of view.

EASTERN GERMANY

New Branch on Rügen

A new standard-gauge branch line seven miles long has been constructed on the island of Rügen to serve the holiday resort of Binz, diverging from the Stralsund-Sassnitz main line at Lietzow and following the coast south-eastwards. Through carriages are now run to Binz from Magdeburg and Leipzig. The Binz station of the narrow-gauge Rügensch Kleinbahnen (now nationalised) has been renamed Binz Ost in consequence.

Publications Received

Diesel Engineers & Users' Association Working Costs Report. London: The Diesel Engineers & Users' Association, 19, Old Queen Street, S.W.1. Price 15s.—Ever since the Diesel Engineers & Users' Association was founded (as the Diesel Engine Users' Association) in 1913, special attention has been paid to producing working costs reports. These have varied in character over the years, as have engines themselves, and their classes of duty. The working costs reports, however, remain as valuable as before. To regard any one of these reports as a record of plant experience, of interest only to those who have identical industrial equipment, is to miss a great deal of the value which they contain. To an engineer the data which they can afford can answer scores of questions, such as: Am I paying the right prices for supplies? Are my engines up to standard in the matter of consumption rates? Is my cost for maintenance reasonable, and do I overhaul at correct intervals? Would the use of waste heat in jacket water or exhaust gases prove an economy in my case? The latest

report, covering the year 1955, is now available at the new and greatly reduced price of 15s.

Handbook for Railway Steam Locomotive Enginemen. London: British Transport Commission. 8½ in. × 5½ in. 196 pp. Illustrated. No price stated.—Although diesel and electric traction are being introduced in an increasing measure on British Railways, the steam locomotive will remain the main source of motive power for some years to come. This handbook, which is being distributed to all members of the foot-plate grades concerned with steam locomotives on British Railways, is intended to assist increased operating efficiency by providing enginemen with a concise guide to the principles of construction and operation of the steam locomotive, to supplement the knowledge gained from their practical experience at locomotive handling. The use and function of representative pieces of equipment are explained with the aid of simple coloured diagrams; important points from each chapter are underlined by the well-proved method of questions and answers. Naturally, with its limited size, this

book cannot be as detailed as some textbooks on the subject; in view of this, we wonder whether the interests of improved fuel efficiency and operating economy might not be better served by giving some guidance, even of a general nature, as to recommended driving methods, on the lines of the section devoted to firing technique.

ABC of Clyde Steamers—This addition to the range of ABC booklets, by Peter Milne, describes vessels in the railway fleets from 1936 onwards. Taking the same date for commencement the author also deals with the ships of the Clyde & Campbeltown Shipping Co. Ltd., the Clyde steamers of David MacBrayne Limited, and the Loch Lomond steamers. The Clyde fleet includes the ss. *King Edward*, the first turbine-propelled commercial vessel in the world, built in 1901, and the paddle-steamer *Lucy Ashton*, built in 1888, which was reprieved from the breaker's yard in 1950 to be converted experimentally to the first jet-propelled ship in the world. The booklet is published by Ian Allan Limited, Hampton Court, Surrey, at 3s. 6d.

Research on British and Western European Railways

Impressions gained from a recent tour of railway research installations

By S. L. Kumar, I.R.S.E., M.A.S.C.E., M.I.E.,
Director, Research, Indian Railway Board

RECENTLY the author visited the railway research laboratories and other developmental institutions of railways on the Continent of Europe and in the United Kingdom. The main object of these visits was to see what research facilities existed, what problems were being investigated, and to what extent the railway problems which faced India, could be solved, or helped in finding a solution by work already done. The visits also afforded an excellent opportunity to the author of meeting a large number of railway officials engaged in research.

The research problems on railways, though of a peculiar nature, cover many fields of human activity and endeavour. Not only do they involve problems relating to civil, mechanical, metallurgical, chemical, electrical, and electronics engineering, but they also encompass problems of metrology, optics, operating, passenger comfort, and staff welfare. The worker in a railway research organisation cannot, therefore, afford to work in a highly specialised and narrowing field without reducing his usefulness.

Co-operation in the O.R.E.

The most striking feature of the research work on the Continental railways was the co-operative research which was organised in 1949 and is being stimulated through the O.R.E. (Office for Research and Experiments), at Utrecht, set up by the U.I.C. (International Union of Railways). This co-operation in research and pooling of resources will soon pay high dividends. From London at one extremity of Europe to Florence and to Stockholm, the growing activities of this organisation were visible. The Indian Railway Board has been alive to the usefulness of being a member of such an organisation, and though the great distances separating Europe and India preclude full-scale participation in the active work of the organisation, an association of some sort will probably soon develop.

Another remarkable feature which was reflected in the research problems

which were being actively pursued, was the evident desire of all railway administrations, despite the many discouraging financial results of the past few years, to provide better and faster train services and to achieve as early as possible the levels of such services which were attained in 1939 and even to excel them.

Rails and Sleepers

Arrears in track renewals and maintenance and in replacement of old power units and rolling stock, which resulted from the second world war, were rapidly being overtaken. Researches both in the laboratories and in the field in the use of long-welded rails, and in the development of concrete sleepers and of the fastenings securing the rail to the sleeper, were in progress in all countries. The safety aspect was receiving, as usual, a good deal of attention. The use of ultrasonic equipment and the non-destructive in-situ testing of rails, axles, and other components and structures liable to fatigue, brittle fracture and stress corrosion, were being adopted as normal maintenance practice and the "bugs" in the new devices that had been evolved were being located and eliminated.

Riding of Passenger Coaches

The problem of passenger comfort in railway coaches was being tackled at a number of research installations. New criteria of comfort were being developed after extensive studies; and representative tests on a large number of human subjects, who were exposed to oscillations of various frequencies and amplitudes, had been made, and their reactions carefully noticed. This work was being correlated with the accelerations, oscillations, and frequencies which occurred at various speeds in a passenger coach with different designs of springing. Such studies ultimately enabled the O.R.E. to complete designs of passenger coaches which had been accepted by all the Western European railways as suitable for use in their international fast trains.

The research organisations of the British and the Western European railways enjoy many facilities and advantages over similar organisations in the East, particularly in industrially less advanced countries. The author was struck by the extensive and varied research equipment possessed by these laboratories, and also by the ease and expedition with which they could obtain components from which new equipment could be built up or developed.

Staff Problems

Furthermore, their industrial development provided such background training to their research staff that even the young research workers showed confidence, originality, and enthusiasm. The research organisations in the East are handicapped not only by the shortage of technical staff, but also by the late start in the field of research and industrial development, besides the difficulties of and delays in obtaining the research equipment from foreign countries.

Abandonment of Steam Traction

A sad thing which could not escape the notice of an engineer of the older generation was the gradual disappearance of the steam locomotive from the Continental railways. Some administrations had already seen the last of their steam engines, and had adopted diesel or electric traction. The research laboratories, which are usually a step or two ahead of current practice, no longer paid any great attention to improving the steam locomotive as a power unit. The wisdom of the decision to adopt diesel haulage for the services when most of the Western European countries depend on distant lands for oil supplies, remains to be seen. In India, unless oil, for which intensive prospecting is going on, is struck, the railway research organisation cannot but devote a good deal of its time to the improvement of the steam engine and its components, particularly as it will continue to be necessary to use, in the years to come, coals of inferior grades.

OPEN DAYS AT LANCING CARRIAGE WORKS.—On August 21, the Lancing Carriage and Wagon Works of the Southern Region will be open to the public from 1.45 to 4.45 p.m. Visitors will be conducted round the works in small groups. Refreshments will be obtainable in the works canteen. A small admission charge of 6d. for adults and 3d. for children will be made, which will be given to the Southern Railway Servants Orphanage, and Homes for Old People. The works have held an open day for the past eight years, and

last year the Southern Railway Servants Orphanage and Homes for Old People benefited by £68, bringing the total sum over the years to £578. It is hoped, this year, to exceed the 1956 figure.

LUNCHEON TO SOUTHERN REGION MAYORS.—Mr. C. P. Hopkins, General Manager of the Southern Region, recently entertained to luncheon at the Charing Cross Hotel, London, past and present members of the Southern staff now serving as Mayors: Mr. C. A. Soar (retired,

formerly Chief Foreman, Eastleigh Locomotive Works), Mayor of Eastleigh; Mrs. L. D. Older (Clerk, Sittingbourne), Deputy Mayor of Faversham; and Mr. H. A. Watts (Passenger Guard, Basingstoke), Mayor of Basingstoke. Also present were Officers of the Region: Messrs. F. D. Y. Faulkner, Public Relations & Publicity Officer; S. A. Fitch, Chief Operating Superintendent; H. C. Lang, Regional Establishment & Staff Officer; W. H. F. Mepsted, Chief Commercial Manager; and W. J. A. Sykes, Chief Mechanical & Electrical Engineer,

Plans for a Trans-Saharan Railway

Branches to serve mines may lead to continuation of construction work on the Mediterranean-Niger line

By Paul Depret,

Directeur Général, Réseau des Chemins de Fer de la Méditerranée au Niger

RECENT prospecting for minerals in the Northern Sahara, under the aegis of the (French Government) Bureau of African Industries (B.I.A.) is likely to lead to extensions of the standard-gauge Mediterranean-Niger Railway, which at present has 171 miles of its own track in operation, extended to 340 miles by through running over the Moroccan Eastern Railways line between Bou-Arfa and Oujda. When completed, the railway will link the Mediterranean ports of Oran and Nemours with the banks of the Niger in the French Sudan.

The first world war showed the potentialities of a trans-Saharan railway both from the military and economic viewpoints, but the demonstration of the practical possibility of crossing the desert fell to a series of large-scale automobile expeditions between 1922 and 1925. The Citroën, Gradiš-Etienne, and other expeditions, in the course of visits to many zones in Algeria and the Niger regions, showed the details of possible routes. A regular transport route was then created between Colomb-Béchar and the Niger. French opinion led in 1928 to the commencement of studies for a trans-Saharan railway, directed by M. Maître Devallon, one of the most eminent promoters of the project. In a report which has stood the test of time, the choice was made of the route Oran-Nemours-Gao, short, easy, and inexpensive, with extensions following the course of the Niger as far as Timbuctoo and Ségou in the west, and to Niamey in the east.

The principle of construction had been agreed a few years before the second world war, but only a provisional section from Bou Arfa to Kénadsa was laid before 1941, at which time, despite the German occupation, a decision was taken to extend the line. An Act of March 22 authorised construction of a standard-gauge system, to be called the Mediterranean-Niger, comprising a line leaving Bou-Arfa, passing close to Colomb-Béchar, Kénadsa, Béni-Abbès, Adrar, In Tassit, and the two extensions, to Niamey via Gao and to Ségou.

This decision was aided by certain circumstances. North Africa was more or less isolated, its activities were greatly slowed down, and abundant manpower was available. The situation brought about by the war might continue for many years.

Furthermore, in France as in Algeria, the scarcity of coal was making itself felt. The Kénadsa mines, near Colomb-Béchar, had been worked since 1918; production could be built up, but the only means of distributing the output

—the metre-gauge line towards Ain Sefra, Oran, and Algiers—was insufficient. An adequate outlet could be provided only by a standard-gauge railway. The Moroccan line from Oujda to Bou-Arfa, a manganese mining centre, had been in service since 1931. Its extension to Colomb-Béchar and Kénadsa would establish a connection on the standard gauge between Kénadsa on the one hand and Nemours and Oran on the other.

After two years' work, in December, 1941, the first coal train left for a port.

Construction was pressed forward to the south, only to be stopped by the Allied landings in North Africa in November, 1942, when some 31 miles from Colomb-Béchar. The Mediterranean-Niger, most of whose employees and equipment were mobilised, did not really recover its staff until the end of the hostilities. After Liberation, because of economic circumstances in general and in particular France's home needs of railway material, it was decided to stop work for the time being on the project. In the meantime, a



The proposed route of the Trans-Saharan line



Ex S.N.C.F. diesel locomotive heading a mixed train from Abadla seen at Neb-Kat on the line to Colomb-Béchar

deviation of 21 miles near Bou-Arfa made possible a reduction in the maximum gradient to 1 in 125, and made construction easier. Eventually, in 1947, the rails to the south of Béchar were completed and taken on to Abadla, on the left bank of the Guir water-course.

Present Position

At the present time, the following sections have been completed: Bou-Arfa to Colomb-Béchar, 102 miles; Colomb-Béchar to Kénadsa, 13 miles; and Colomb-Béchar to Abadla, 56 miles; a total of 171 miles. Many industrial establishments in the area are served by connecting lines, in particular, a branch three miles in length serves the coal measures of Ksi-Ksou

on the Colomb-Béchar—Abadla line. By making use of the Moroccan Bou-Arfa-Oujda line the Mediterranean-Niger is, in effect, prolonged from Nemours to Abadla, a length of 340 miles, or roughly a quarter of the distance from the sea to the Niger. The port of Oran, linked to Oujda by the main Algeria-Morocco line of the Algerian railways, is equally a railhead for the Mediterranean-Niger: a short cut could be achieved by building a line, over favourable terrain, from Aïn Témouchent to Marnia, giving a direct line Oran-Aïn Témouchent-Marnia.

Working and Traffic

The 171 miles of lines built are open to passengers and freight traffic. Passengers are carried by daily mixed

trains. Moreover, railcars run two or three times a week between Oujda and Colomb-Béchar; occasional trains keep the service between Colomb-Béchar and Abadla open. Freight traffic is carried mainly by complete trains, with a normal load of 900-1,000 tonnes, which give a skeleton service. Passenger traffic doubled between 1945 and 1949 and has remained more or less stationary since then, fluctuating between 5 and 5.5 million passenger-miles. This is explained by the development of the use of private motorcars and the restraints imposed by frontiers.

On the other hand, merchandise traffic has progressed more or less continuously, as shown below:—

| Year | Tonnage carried (tonnes) | Tonne-km (000s) | Increased compared with 1948 (per cent) |
|---------|--------------------------|-----------------|---|
| 1948 .. | 195,484 | 41,996 | — |
| 1949 .. | 219,372 | 46,671 | 11.1 |
| 1950 .. | 292,817 | 57,839 | 37.7 |
| 1951 .. | 307,254 | 59,513 | 41.7 |
| 1952 .. | 305,436 | 54,333 | 29.4 |
| 1953 .. | 356,677 | 64,524 | 53.6 |
| 1954 .. | 423,922 | 73,181 | 74.2 |
| 1955 .. | 484,429 | 77,606 | 84.8 |

The year 1948, taken as the base year, was that in which the system came into existence. Some 90 per cent of the tonnage represents combustible minerals which can be produced and exported for the coal market.

Receipts for 1948-1950 were more or less even; those for 1951-1955 were balanced in less satisfactory conditions following difficulties in adapting charges to the movements of wages and prices coupled with tariff concessions made to users to help the economic development of the Colomb-Béchar region.

The relief of the ground, with few hills, has made it easy to build a road-bed with few engineering works of importance. The by-pass of Foum Defla, near Bou-Arfa, has required an

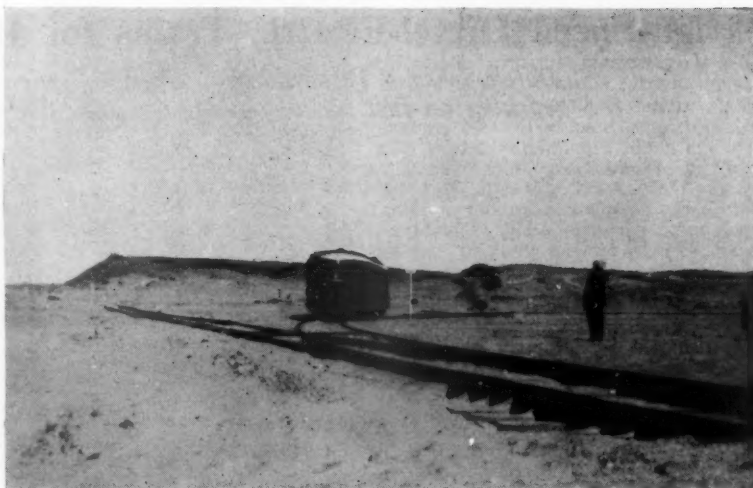


De Dietrich twin railcar in service on the northern end of the Trans-Saharan Railway

embankment 40 ft. high and a masonry viaduct with seven arches of 26 ft. span. On the line from Colomb-Béchar to Abadla, as part of the original plans, three water-courses have needed revetments. For two other water-courses (Wadi Béchar) the track is fixed on Palvis gabions anchored in the rock, constituting a weir which is submerged by floods. These are of short duration in the Sahara and the movement of trains is restricted only for 24-36 hr. To cross Wadi Sfaïa, a different system has been applied because of the sandy nature of the bed. The track is enclosed between two small masonry walls level with the bed and bound by ties of reinforced concrete. Such arrangements, cheap and easily carried out, are sufficient while the traffic is not such as to need a continuous service.

Track Material

The track is of used material of second quality, the only sort to leave France in the 1940-41 period. The rails are 70-88 lb. of various types and in short lengths (26-39 ft.) with wooden sleepers, all more or less heavily worn before being re-used. Renewal in new material, and especially with steel sleepers, was expected within a short time, but with economy always in mind, the system has had to make do with the existing material. Various palliatives have allowed joints to be held provisionally but the number of breakages of rails has increased each year. The sleepers, however, are for the most part at the limit of their lives. Replacements call for about 25,000 sleepers a year, say 7 per cent of the main-line sleepers. With the methods used, the creosoted wood sleepers remain serviceable, if great care is taken, despite the attacks of termites—fortunately limited to the most humid sections. The system expects soon to start renewals in 100-lb. rail and with reinforced concrete sleepers with steel cross-ties. These sleepers can be made economically at



Diesel railcar at the junction of the Ksi-Ksou branch with the Colomb-Béchar-Abadla main line

Colomb-Béchar. Welding in lengths of 118 or 177 ft. also is being considered. Ballast for the most part is gravel or sandy soil from clearance or occurring naturally. Its depth is limited to 10 in. and, at times, to 7½ in. because of the exceptional quality of the road-bed.

Except in some sections, particularly near Mengoub, the track is little exposed to obstructions, and the danger of service interruptions is limited to cuttings. Their slight depth (10 ft. maximum) allows the embankments to be modified so as to produce an aerodynamic profile allowing free passage of sand-bearing winds, notably reducing deposits.

Motive Power

Working is carried out as economically as possible. For worn out motive power (locomotives dating from 1919) the system has, for the haulage of

heavy trains, six Baldwin diesel-electrics of 1,500 h.p. used jointly in a pool with the Moroccan railways and able to haul some 1,500 tonnes on a 1 in 125 gradient. Work at stations, and on the line with lighter trains, until now done by two diesels of 800 and 600 h.p. provided by the S.N.C.F., is performed by three 750-h.p. diesel-electric locomotives recently purchased. The three railcars are of Dietrich 640-h.p. type.

The fleet of wagons consists of some 300 units of 20-30 tons capacity, of modern types. Rolling stock is maintained by the system itself in its works at Oujda and Colomb-Béchar. Trains are regulated on the single line by telephone supplemented by wireless, which is also installed on the railcars for use while running.

Plans for Extension

The survey of the 1,254 miles separating Colomb-Béchar and Gao was finished in 1947. These studies largely confirm that, on the whole of the route, construction raises no serious problem. Despite the severity of the requirements, with minimum radius of curves 547 yd. and maximum gradients of 1 in 166, earthwork will not exceed an average of 6½ cu. yd. per metre of track, and no tunnels and very few important works are needed. The cost of construction, of which the material for the track itself accounts for 55 per cent, will be about £36,200 a mile.

The central French Sudan, and notably the left bank of the Niger, stands condemned to stagnation. The lack of communications with the outside world other than by tracks prohibits the establishment of commercial enterprises. The local resources in live-stock, oils, textile fibres, coffee, rice, and so on, could rapidly furnish 300,000 tonnes for export. In the north-south direction, additional food products, equipment, construction materials, military needs, and so on, could represent

(Continued on page 192)



One of the three 640-h.p. De Dietrich railcars standing at Le Ksi-Ksou

High-Speed Diesel-Electric Trains for International Services

Dutch-Swiss "Trans-Europe Express" air-conditioned sets working on fast schedules between principal business centres



General view of 2,300-b.h.p. four-car diesel-electric train with Werkspoor power car and SIG trailers

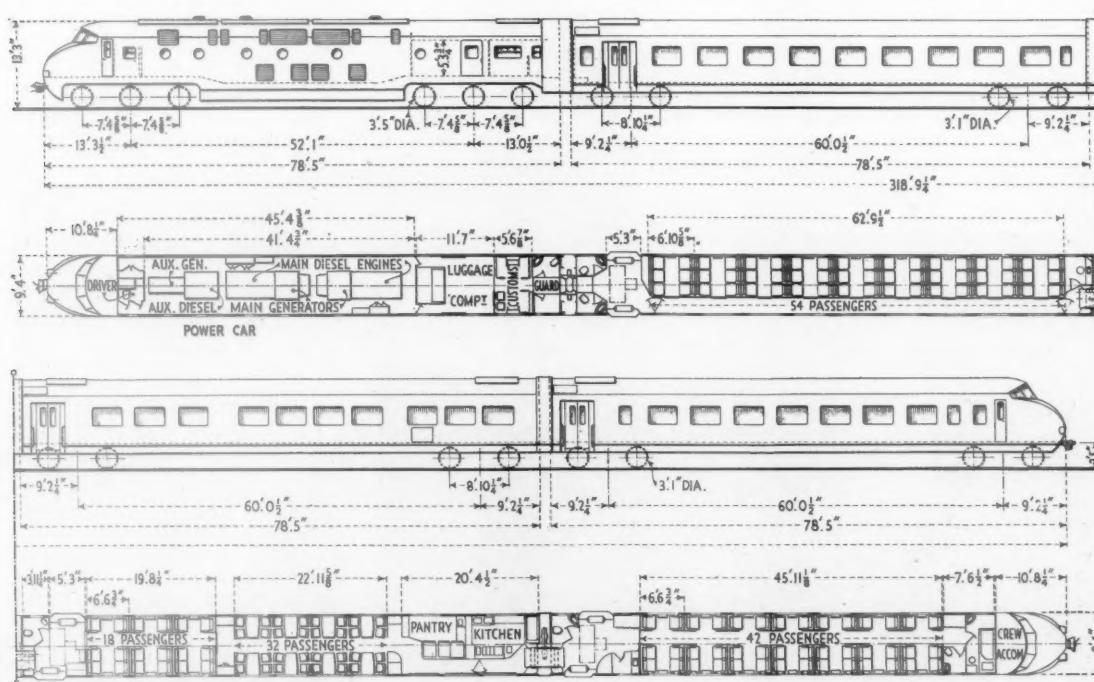
THE railways of the Netherlands and Switzerland and of certain other countries last year came to an arrangement with the aim of providing a fast and comfortable passenger service between the most important business centres in Europe, by using rolling stock specially designed and equipped for this purpose, the trains being known as the "Trans-Europe Expresses." Most of

the administrations concerned have developed and purchased new rolling stock in the form of fixed train sets equipped with diesel engines as prime movers. They are therefore independent of any fixed source of energy, an important consideration where varying systems of electrification are involved.

In accordance with the international character of the service, the train sets

of all participating countries have the same outside colour scheme (of red and cream), and carry the same emblem, but in all other respects, the several designs were developed independently from each other.

The Netherlands and Swiss Federal Railways collaborated in ordering together from a combination of Netherlands and Swiss manufacturers the



Four-car set with two main engines, one auxiliary engine, and four traction motors all in the power car



First class six-seat compartment with window louvres lowered

design and delivery of five diesel-electric train sets which will be operated on common account. As a result of negotiations, five motor coaches were built by Werkspoor N.V. Amsterdam, and five sets of trailers were built at the Neuhausen-Rheinfall works of Suisse Industrie Gesellschaft (SIG); the electrical part of the propulsion equipment was also manufactured in Switzerland by Brown Boveri.

General Data

Altogether, five train sets were ordered for the fast international services, each consisting of one motor coach and three trailer coaches; a schematic diagram of the actual layout is given in the accompanying drawing. Control is from the cab at each end, and trains can be formed into a

multiple-unit by using two sets of four, in which case control is from the leading cab. Multi-purpose Scharfenberg automatic centre couplers are fitted.

The number of seats is 114, exclusive of the restaurant car, which seats 32. The total tare weight of the train complete is 225 tons, of which the motor coach weighs 114 tons.

The propulsion equipment consists of two diesel engine generator sets, each composed of a 16-cyl. Werkspoor diesel engine and d.c. generator. The engine is the RUHB 1616 type, with a bore and stroke of 160 mm. x 200 mm. respectively. Each is rated at 1,000 h.p. with a maximum of 1,400 r.p.m.; Büchi supercharging is installed. The controlling of the sets is by a Woodward regulator in combination with a Brown Boveri servo-field regulator. Generators

are rigidly coupled to the engines and have only one bearing. An auxiliary generator is directly connected for battery charging, control current, emergency lighting, ventilator motors, and compressors. The main generators are 650 V. d.c. maximum 2,200 A.

Each main generator feeds two 292-kW., 580-V., 540-A., 1,550-r.p.m. traction motors permanently connected in parallel. They drive the outer axles of each bogie by flexible drive; the gear ratio is 23:72.

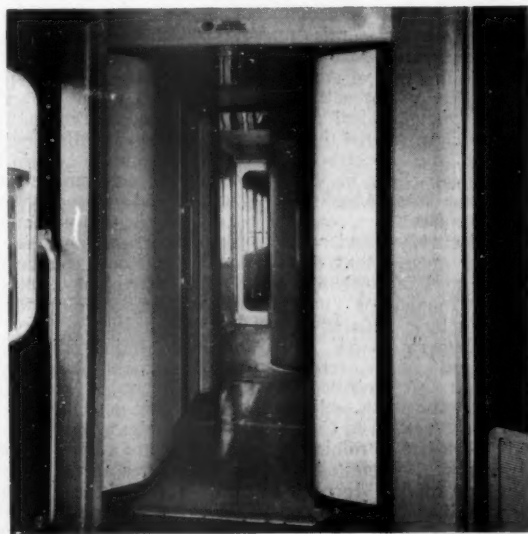
Furthermore, the generators are used for starting the diesel engine, in which case they are fed by a 300 A. alkaline battery of 90 cells. The current for lighting, heating, air-conditioning, pre-heating of cooling water, kitchen, and public address system, is supplied by means of an auxiliary set comprising a supercharged Werkspoor 8-cyl. engine, type RUB 168 having a capacity of 300 h.p. at 1,000 r.p.m., and a three-phase a.c. generator set with a continuous capacity of 270 kW. at 220/380 V., 50 cycles.

Control Equipment

Control is kept very simple by reason of the fact that, as a general rule, an attendant is available in the engine room. Elements consist of the main controller, reversing handle, brake valve, and a number of switches for lighting, and so on. On the instrument-panel there are four ammeters for the four traction motors, four tachometers for the four diesel engines, and pressure gauges for main reservoir and braking; a speedometer is also fitted. Warning lamps indicate wheelslip, brake release, and high-pressure brake. Although the driver will rarely be alone, a deadman's handle is provided. The main controller has, apart from the zero position, eight positions related to seven stages of the diesel engines, and one position for weak field of the traction motors.



Corner of the kitchen/restaurant car



Vestibule connection between trailers

The diesel engines are water cooled. The radiators on the roof are cooled by electrically-driven ventilators with thermostatic temperature control; the cooling water circuit also comprises the oil coolers. Electric elements, fed either by the auxiliary generator, or from an outside source, maintain the cooling water at the correct temperature even at the end of prolonged standstill.

Compressed air is supplied by two electrically-driven compressors, the main reservoir pressure is nine atmospheres. The air brake is of the Oerlikon system and of the gradual type, brake pressure is increased at speeds above 40 m.p.h. Brake blocks are fitted at each side of all wheels with automatic slack adjusters. Maximum speed of train sets in service is given as 87.5 m.p.h. on level track, and on a gradient of 1 in 62 44 m.p.h. is obtained in 3 min.

Air Conditioning

Stone-Carrier air conditioning is fitted throughout the three trailers, and gives controlled constant temperature and quality throughout all ambient variations. The double-glazed windows are hermetically sealed, and they also have a special type of light-metal venetian blind running between the two panes of glass, raised and lowered by a handle at the side of the window and with means to adjust the inclination of the slats. To accommodate these details a channel-section waist rail is welded to the vertical members and side panels of the car frame. All



Open saloon in the control trailer

seats are reclining single armchairs with adjustable backs.

The trailer car immediately behind the equipment car contains nine single compartments each seating six, while the second trailer serves as a restaurant car with a modern electrically-equipped kitchen, complete with grill, coffee machine, mixer, and refrigerator.

The third car is a single large compartment with 42 seats, with a separate sleeping compartment for the train

crew. Special attention has been given to the design of the intercommunication between cars to make vestibules free from draught and dust. The train contains five lavatories and two toilet rooms. All passenger compartments have indirect fluorescent lighting. The car bodies are insulated against sound and heat. Bogie axles are fitted with SKF roller-bearing axleboxes with oil damping, spiral springs, and torsion bars are fitted.

Plans for Trans-Saharan Railway

(Concluded from page 189)

200,000 tonnes. Further, North Africa would benefit from the surplus production of wine, fruits, vegetables, preserves, and food.

In July, 1953, the Assembly of the French Union, taking account of the prospecting for minerals undertaken within the Algerian-Moroccan borders and in the direction of Adrar, and also the possibility of the setting up of an industrial metallurgical combine at Colomb-Béchar, invited the government to pursue the construction of the Mediterranean-Niger in that direction. The distance from Abadla to Adrar is about 326 miles.

Mineral surveys, under the aegis of the B.I.A., suggest that there may be 1,500,000 to 2,000,000 tonnes in the Algerian manganese measures of Djebel Guettara, situated at the north point of Ougarta massif, which allows the creation of a ferro-manganese industry at Colomb-Béchar to be envisaged. The B.I.A. believes it necessary to join Guettara to Colomb-Béchar by rail. Further, a mining branch towards Taouz is suggested to facilitate the working of the Moroccan mines.

These railway projects comprise a 125-mile line leaving the Colomb-

Béchar to Abadla line, crossing the coal-basin of Sfaïa-Abadla, and a 40-mile branch leaving the previous line and reaching the mines of M'Fis, at the entrance to the inhabited region of Tafilalet. These branches can be extended, the first in the Ougarta direction to rejoin the trans-Saharan line, the second to the west of Taouz to serve the important iron deposits found in Djebel Signit and Djebel Ougnat.

The link with Guettara and Taouz will allow, apart from mining works, the creation of industries at Colomb-Béchar, the development of which as a town is certain to come. The presence of coal and sources of power, mines and various materials, makes it reasonable to foresee the establishment of a ferro-manganese works, a cement works, a synthetic ammonia and fertiliser plant, a compressed concrete plant, refractory products plants, and a metallurgical industry.

Industrialisation of the region would have to be accompanied by the development of agricultural production. To this end, the B.I.A. has planned to irrigate the Guir valley, which constitutes a huge field for expansion (100,000 acres at the first stage), with construction of a dam and reservoir to hold back flood-water for use in irrigation. Such a transformation would mean,

for the Mediterranean-Niger, a new source of activity. The connection to Guettara and Taouz would double the stability of the system, bringing a reduction in the average cost of transport. The mine traffic in the first years would be more than 100,000 tonnes, with stores, equipment, and so on of 130,000 tonnes. To this would be added the products of agriculture and industry carried out to the coastal regions.

Colomb-Béchar is the first organised area in the French Sahara (Zone d'Organisation Industrielle Africaine No. 1). The development of any arid area is not difficult if it has the benefit of a fast, low-price, large-capacity, railway service. That is the main advantage of the Mediterranean-Niger. Moreover, it makes an important contribution to improving the standard of living for the population of this Zone, comprised of about 60,000 autochthons and several thousand Europeans.

The working budget of the system, now held within tight limits because of the nature of the traffic, to which special tariffs apply, would recover a certain flexibility and there would be an appreciable benefit in working, assuring, from the start, a reasonable return on the capital. The cost of construction of the extensions is estimated at £5,500,000.

RAILWAY NEWS SECTION

PERSONAL

Dr. Mao Yi-hsien, Chief Technical Adviser to the Chinese Ministry of Railways, has arrived in the United Kingdom on a visit. He will remain until the end of August, and is staying at the Mandeville Hotel, Mandeville Place, London, W.1.

Mr. L. G. David, Member of the Staff Board, Victorian Government Railways,

of Yngeredfors Kraft A.B., Mölndal, to attend the inauguration ceremony, on August 19, of a Stahl gas turbine plant at Varberg and a water power plant at Skåpanäs.

Mr. B. T. Randall has been confirmed in the position of Assistant to Commercial Manager (Freight Rates & Charges), Liverpool Street, Eastern Region, which he has been filling in an acting capacity since April, 1956.

Eastern Bengal Railway, Pakistan. From June to September, 1954, he served as General Manager of that system.

British Railways, Eastern Region, have announced the appointment of Mr. H. E. Smith, Head of Outdoor & Display Section, Public Relations & Publicity Officers' Department, North Eastern Region, as Display Assistant, Public Relations & Publicity Officer's Department, Eastern Region.



Mr. L. G. David

Appointed Chairman of the Staff Board,
Victorian Government Railways



Mr. S. B. Azid

Appointed General Manager,
Chittagong Port

Australia, who, as recorded in our June 14 issue, has been appointed Chairman of the Staff Board, began his railway career as a junior clerk in 1911. He served in the Rolling Stock Branch until transferred to the Secretary's Branch in 1923. His experience in the Secretary's Branch has been mainly on staff work, including appointments as Member of the Board of Discipline, Industrial Advocate, and Chairman of Classification Committees. During the 1914-18 war Mr. David served with the Australian Flying Corps.

South African Railways have announced the appointment of Mr. C. Rezelman, System Manager, Port Elizabeth, as System Manager, Durban, in succession to Mr. H. A. Gregorowski, who has retired.

Mr. Ranald J. Harvey, Senior Partner of Ranald J. Harvey & Partners, Consulting Engineers to the New Zealand Government, is travelling to Sweden on August 17, at the invitation of Herr Bjerström, Managing Director

Mr. George Brian Gray, British Railways General Agent, Dublin, has been appointed Divisional Traffic Manager, Barrow, London Midland Region.

Mr. S. B. Azid, Chief Engineer, Eastern Bengal Railway, Pakistan, who, as recorded in our July 26 issue, has been appointed General Manager, Chittagong Port, was born in 1906. He entered railway service as an Assistant Executive Engineer on the Great Indian Peninsula Railway in 1929. After serving at various stations on that railway he was transferred to the Railway Board, New Delhi, as Deputy Director, Labour Welfare, in 1945. He returned to his parent railway in 1946, and, in 1947, at the time of partition, he was posted as Divisional Superintendent, Quetta, on the North Western Railway in West Pakistan. After working for about four years as Divisional Superintendent, he was transferred to the Railway Division, Karachi, as Director, Civil Engineering, from where he was transferred as Chief Engineer,

Mr. G. Coaker, Assistant to Commercial Manager (Development), Eastern Region, British Railways, who, as recorded in our March 8 issue, has been appointed Commercial Superintendent, (Great Eastern), entered the service of the London & North Eastern Railway as a Traffic Apprentice in October, 1929. After training at various District Offices and depots, he was appointed Assistant Yardmaster, Kings Cross Goods in October, 1933. He was appointed Yardmaster, Lincoln, in February, 1938, and served with H.M. Forces from September, 1939, to November, 1945, attaining the rank of Colonel. While in the Forces, in September, 1945, Mr. Coaker was appointed Assistant District Superintendent, Lincoln. In November, 1947, he became Assistant London City Manager, the title of this position being amended to Assistant District Goods Superintendent (London City) in April, 1950. Mr. Coaker was appointed Assistant to Commercial Manager (Development) Eastern Region, Liverpool Street, in March, 1954.



The late Mr. W. R. Oaten

Assistant Editor (Mechanical),
The Railway Gazette



Mr. D. Fenton

Appointed Movement Superintendent (Great
Eastern), Eastern Region



Mr. W. J. Hartnell

Appointed District Commercial Manager,
Newport, Western Region

We regret to record the death, on August 9, at the age of 66, of Mr. W. R. Oaten, Assistant Editor (Mechanical), *The Railway Gazette*, and a former Deputy Chief Mechanical Engineer (Works), South Indian Railway. Mr. Oaten was born in 1891, and educated at Eveswell School, Newport, Mon, and Newport Technical School. He began his career in 1905 with the Uskside Engineering Co. Ltd., Newport, and in 1918 joined the British Mannesmann Tube Co. Ltd. He went to Armstrong Whitworth & Co. Ltd., Newcastle-on-Tyne in 1922, and during the latter part of his service was Progress Engineer to the Locomotive Department. In 1927 he joined the South Indian Railway as Assistant Works Manager, Golden Rock, Trichinopoly and became Deputy Chief Mechanical Engineer (Works) in 1940. In 1946 and until proceeding on retirement leave in 1947 he also acted as Chief Mechanical Engineer. During the 1939-45 war he held a commission in the Indian Engineers (Defence of India), and was awarded the O.B.E. for services in connection with wartime manufacture of munitions and aircraft components in the railway works. On his return to this country in 1947 he joined the staff of Sir Bruce White, Wolfe, Barry & Partners, as Chief Mechanical Engineer, and was engaged on the design and construction of the Tata Locomotive Building Works at Jamshedpur. In October, 1949, he joined *The Railway Gazette* editorial staff, and became Assistant Editor (Mechanical) in 1953. Cremation took place at Brighton on August 14.

Mr. D. Fenton, Assistant to Operating Superintendent (General), Eastern Region, British Railways, who, as recorded in our March 8 issue, has been appointed Movement Superintendent (Great Eastern), Liverpool Street, entered the service of the former L.N.E.R. as a Traffic Apprentice in October, 1935. After a period of training in the Southern Area, he had further experience in the Passenger Manager's and Divisional General Manager's Offices before being appointed Supernumerary Assistant to the District Superintendent, Cambridge in June, 1940. In September, 1940, Mr. Fenton joined H.M. Forces and was commissioned in the Royal Artillery, being demobilised in February, 1946, with the

rank of Captain (Instructor in Gunnery). After a short period as Assistant Yardmaster, Spitalfields, Mr. Fenton went to the Scottish Area, L.N.E.R., where he had both Commercial and Operating experience before returning to the Works Section of the Divisional General Manager's Office, Southern Area, L.N.E.R., Liverpool Street, in August, 1947. He was appointed Assistant District Operating Superintendent, Lincoln, in November, 1948, and in May, 1950, took up the corresponding position at Manchester. He became Assistant District Operating Superintendent, Nottingham, in November, 1952, followed by the post of District Operating Superintendent, Fenchurch Street (Southend District) in March, 1954. Mr. Fenton was appointed District Operating Superintendent, Hull, in February, 1955, and Assistant to Operating Superintendent (General), Eastern Region, in May, 1956.

Mr. P. A. Satchwell, Work Study Officer, British European Airways, British Transport Commission, who, as recorded in our July 26 issue, has been appointed Work Study Assistant, was educated at Bellahouston Academy, Glasgow, and began his career in Automobile Engineering. During the war he served in the Engineering Branch of the Fleet Air Arm. In 1955 he joined the Organisation & Methods Branch of British European Airways as Work Study Officer, where he had considerable experience in applying Work Study techniques to the various activities of the Corporation, including Engineering Maintenance, Production Planning & Control, Freight & Passenger Handling and Clerical procedures. He received his work study training at Birmingham College of Technology and attended a course at Birmingham University on Production Planning and Control.

Mr. H. Leyshon, who, as recorded in our July 26 issue, has been appointed Assistant (Development), Operating & Motive Power Department, British Transport Commission, entered the service of the former Midland Railway at Swansea in 1916 and after 10 years in the Goods Department was transferred to Euston in 1926, for duties connected with the general revision of freight rates. On completion of this work in 1928, he

took a position in the Goods Rates Section of the Chief Commercial Manager's Office. In 1936 he was transferred to the Chief Commercial & Chief Operating Manager's New Works Section at Euston, and in 1948, joined the New Works Section of the former Railway Executive.

Mr. B. Reynolds, Senior Executive Assistant, Signal Engineering Department, London Transport Executive, who, as recorded in our July 26 issue, has been appointed Signal Development Assistant, was born at Mitcham, Surrey, and was educated at John Ruskin Grammar School, Croydon. He joined the Signal Department of London Transport in 1939 where he was engaged on work connected with new works schemes and modernisation. In 1948 he took charge of a division formed to handle work study and incentive bonus schemes and in 1950 was appointed Senior Executive Assistant in the Signal Engineer's Drawing Office, London Transport.

In our July 26 issue, when we briefly recorded the above three appointments, we also recorded the appointment of Mr. F. G. Manning as Assistant Director, General Matters, Finance Department, British Transport Commission. Mr. Manning's photograph and biography were published in our February 15 issue, on his appointment as Administration Officer, Finance Department, B.T.C.

Mr. W. J. Hartnell, Assistant District Commercial Manager, Bristol, Western Region, British Railways, who, as recorded in our August 2 issue, has been appointed District Commercial Manager, Newport, began his career with the Great Western Railway in the Engineering Department at Bristol in 1924. In 1927, he undertook a special training course of four years in all departments of the railway, most of which time was spent in South Wales. He subsequently became Goods Agent at Newham, Cornwall. As an Officer in the Royal Engineers (Supplementary Reserve), he served with the B.E.F. in France, and later with the Royal West African Frontier Force, mostly in Nigeria and the Gold Coast, primarily on transportation work. At the end of hostilities he spent over a year in the



Mr. D. S. Lewis

Appointed District Commercial Superintendent
Middlesbrough, N.E. Region



Mr. G. Groome

London Purchasing Agent, Canadian
Pacific Railway, 1953-57



Mr. W. M. B. Lamb

Appointed London Purchasing Agent,
Canadian Pacific Railway

Russian Zone of Germany, opening up and running the Railway Line of Communication through to Berlin. On his return to England Mr. Hartnell underwent a short course of training and was then appointed Goods Agent at Paignton. Then followed appointments as Acting Goods Agent, South Lambeth; Assistant Goods Agent, Paddington; and Goods Agent, Worcester. In 1950, he became Assistant District Commercial Manager, Exeter, and four years later Assistant District Commercial Manager, Bristol, the position he now vacates.

Mr. D. S. Lewis, District Commercial Superintendent, York, North Eastern Region, British Railways, who, as recorded in our July 26 issue, has been appointed District Commercial Superintendent, Middlesbrough, began his railway career with the London & North Eastern Railway at Wakefield in 1924. In 1932 he was appointed a Traffic Apprentice and after training in the North Eastern Area, acted for a short time as Assistant Yardmaster, Hull East. He occupied various posts in Hull, and became Chief Staff Clerk in the District Goods Manager's Office in 1937, and Head of the District Superintendent's and Divisional Locomotive Superintendent's Joint Staff Section in 1939. In the following year he moved to Ipswich on appointment to the position of Chief Clerk in the District Goods & Passenger Manager's Office, and in 1943 took up a similar position in Lincoln. Mr. Lewis was seconded, in February, 1944, to the Nigerian Railways as Assistant to the General Manager, and after an 18 months tour returned to this country to take up the appointment of Goods Agent, Leicester (Braunstone Gate & Belgrave Road). In 1947 he moved to Norwich on appointment to the position of Assistant District Commercial Superintendent. On January 1, 1951, with the establishment of a common commercial service in East Anglia, Mr. Lewis was made District Passenger Superintendent at Norwich and at the same time acted as Assistant Area Freight Superintendent. In November, 1954, he was appointed District Commercial Superintendent at York. It is this position he now vacates to take up his new appointment at Middlesbrough.

Mr. George Groome, Purchasing Agent for the Canadian Pacific Railway in London, who, as recorded in our August 9, issue, has retired after 51 years of service, was born in Liverpool, and joined the Allan Line later absorbed by the Canadian Pacific Railway in 1906. In the 1914-18 war he served in the Kings Liverpool Regiment, returning to the company in Liverpool in 1918, in the accounts department, and was transferred to the purchasing department, London, in 1921. When the Southampton office was opened the following year he moved there on promotion and remained there until 1940. He returned to Liverpool in 1942, as Assistant Purchasing Agent, and in 1953 moved to London again to take up the appointment he now vacates on his retirement. Throughout his long career Mr. Groome's purchases have ranged over an extremely wide field. Mainly he has bought the equipment and stores for the C.P.R. fleet of passenger and cargo liners, but has also handled purchases for the parent railway company and, more recently, for the latest subsidiary, Canadian Pacific Airlines.

The Institute of Welding have announced that Sir Charles Lillicrap and Mr. J. Strong have been re-elected President and Vice-President respectively.

Mr. J. Masterson, Overseas Technical Representative of Expandite Limited, will be leaving this country on September 4, 1957, on a tour of the company's distributors in Libya, Belgian Congo, and the Central African Federation.

Mr. Charles Hemm, Director of Projects, Dunlop Rubber Company, is retiring at the end of the current month after 30 years with the Company.

Mr. B. G. Mahony has been appointed Manager of the new Nottingham branch of Simms Motor Units Limited. Mr. G. G. Paget has been appointed Manager of the Sheffield branch.

Mr. Paul J. Every has been appointed Managing Director of the Cummins Engine Company Incorporated subsidiary in Shotts, Lanarkshire.

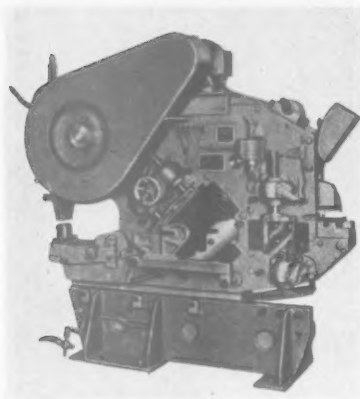
Mr. W. M. B. Lamb, Assistant Purchasing Agent, Liverpool, Canadian Pacific Railway, who, as recorded in our August 9 issue, has been appointed Purchasing Agent for the Canadian Pacific Railway in Europe with headquarters in London, was born in Aberdeen in 1915, and educated at the Robert Gordon's College, Aberdeen, and Toronto University where he did extra mural and general courses. He joined the Canadian Pacific Railway in the Purchasing Department, Toronto, in May, 1930, and returned to this country in 1935 to enter the same department in London. At the outbreak of war in 1939 he was mobilised in the London Scottish and was commissioned on March 1, 1940, in the Leicestershire Regiment reaching the rank of captain with service in North-West Europe. He returned to the Canadian Pacific Railway after demobilisation in February, 1946, and in September, 1953, was appointed Assistant Purchasing Agent in Liverpool where he remained until his present appointment. Mr. Lamb will be responsible for buying all supplies in Europe for Canadian Pacific Railway, Canadian Pacific Steamships and Canadian Pacific Airlines.

Mr. C. R. H. Simpson has joined Beyer, Peacock & Co. Ltd., in London, as Assistant to the Technical Sales Manager. He will handle publicity, advertising, and the production of technical literature relating to the many products of the Beyer, Peacock group. Mr. Simpson for many years was Director & Editor of *The Locomotive*.

L. H. Brooke has been appointed Lighting Representative for Philips Electrical Limited in the North Staffordshire area.

The newly-constituted board of I. T. D. Limited, referred to elsewhere in this issue, is as follows:—Mr. J. V. Daniel, Managing Director, Crompton Parkinson Limited; Mr. G. W. Harriman, Deputy Chairman, Austin Motor Co. Ltd., British Motor Corporation; Mr. M. H. L. Lewis, Managing Director, Crompton Parkinson Limited; Mr. G. T. Sammons, Partner, Allen & Overy; Mr. W. E. Schirmer (U.S.A.), Vice-President, Clark Equipment Company; Mr. S. J. Wheeler, Director, Austin Motor Co. Ltd.

NEW EQUIPMENT AND PROCESSES



Combination Shearing Machines

TWO recently developed models of the range of Ficep shearing machines are the Standard universal combination punching and shearing machine and the hand lever operated model 558 K. The latter design is illustrated.

The Standard shears are available in five sizes; the smallest, size 10, is mounted on a portable cabinet base and will shear $\frac{1}{8}$ in. M.S. plate, punch $\frac{1}{4}$ in. through $\frac{3}{8}$ in., crop 3-in. angles and tees and 1½-in. bars and notch $\frac{1}{8}$ -in. plate. The corresponding capacities for the largest, size 25, are 1 in., 1½ in. × 1 in., 7-in. angles and 2½-in. bars, and $\frac{3}{8}$ in.

The machine has a portable electric foot control switch. Blades for shearing special sections can be supplied on request.

The model 558 K shears performs all the functions of a power-operated machine and is built in four sizes. The twin lever

operation enables size 8, the smallest of the range, to shear $\frac{1}{8}$ in. plate, punch $\frac{1}{4}$ in. × $\frac{1}{8}$ in. crop 2-in. angles and tees and $\frac{1}{4}$ -in. bars, and notch $\frac{1}{8}$ -in. plate. Corresponding figures for the largest model, size 18, are $\frac{1}{2}$ in., 1 in. × $\frac{1}{4}$ in., 3½ in. and 1½ in., and $\frac{1}{8}$ in.

Further details of these Ficep shearing machines are available from the distributor in this country, Thos. W. Ward Limited, Albion Works, P.O. Box 141, Sheffield.

Stud Welding Equipment

EQUIPMENT for welding studs or attachments of up to $\frac{1}{4}$ in. dia. has been developed, which is stated to be more compact than previously available. Applications include the stud welding of the interiors of steel or aluminium rolling stock. This equipment, known as the Crompton J/K, is a portable handtool capable of welding items of ferrous and non-ferrous metals, having an overall length such that with a 1-in. long component, only 9-in. headroom is required. The controller is readily portable, and requires no power for control purposes other than that from a standard welding current source.

The handtool weighs some 5½ lb. and measures 7½ in. overall when loaded with a 1-in. long stud. A consistent arc length can be maintained despite variations in stud or attachment length of up to ±¼ in. A range of suitable taper shank chucks and ferrule grips to suit different studs are also provided.

The tool body is built up from two alloy castings with an integral pistol-type handle enclosing the operating coils and adjustable lifting device. A moveable clamp ring on the nose of the tool provides a means of gripping an adjustable leg, the length of which may be quickly varied to accommodate different lengths of attach-

ment up to 3½ in. long. A single-point foot at the bottom of the adjustable leg is interchangeable with the standard feet of the manufacturer's Nelson range, and can, therefore, take the complete range of Nelson standard ferrule grips.

The controller weighs 26 lb. and measures 7½ in. wide × 11½ in. deep and 11½ in. high. The front panel is recessed to provide protection for the timer control, plugs and sockets and pilot lamp mounted on it. A pneumatic device controls welding current timing. A dial indicates the time setting. A standard 15-ft. length of cable between the various components is also provided.

Full details regarding the Crompton J/K equipment will be furnished by the manufacturer, Crompton Parkinson Limited, Stud Welding Organisation, 1-3, Brixton Road, London, S.W.9.

Ratchet Pulling Tackle

THE introduction is announced of the Rotolift Pull-Jack which can be used for a variety of lifting and pulling appli-



cations. Examples of these include moving wagons along railway tracks on inaccessible sites, lowering locomotive components into inspection pits, and gauging rail tracks.

The flexibility of the load chain which is a hardened steel link type will prove, it is stated, of great advantage. The chain is of nickel chrome molybdenum welded alloy steel, which is calibrated and polished, hardened and tempered. The equipment is suitable for working in confined spaces with low headroom; an automatic brake is fitted. Another advantage of the Rotolift Pull-Jack is that loads can be moved with great accuracy.

Ball-bearing load hooks are fitted, facili-



tating the manipulation of loads, the hooks themselves being heat-treated steel forgings. A handwheel is fitted to raise or lower the unloader and bottom hook to the desired position for quick initial adjustment.

Three models are at present in production; these have capacities of $\frac{1}{2}$, $1\frac{1}{2}$ and 3 tons, designated L.15, L.30 and L.60. The standard lifts for each model are 4 ft. 7 in., 4 ft. 5 in., and 4 ft. 6 in., and minimum distances between hooks are $12\frac{1}{2}$ in., $15\frac{1}{2}$ in., and $17\frac{1}{2}$ in., respectively. Approximate weights are 20 lb., 34 lb. and 48 lb.

The price for the L.15 is £11; L.30, £17; and L.60, £23 10s. Delivery is ex-stock. The manufacturer is the Rotolift Sales Company, Glasshouse Street, St. Peters, Newcastle-upon-Tyne, 6.

Cold Casting Metal Filler

A PRODUCT which can be used for repairs to metal castings, building up of indented parts, and as a jointing compound between metal sheets, is now being manufactured under the trade name, Metolux.

The material is claimed to possess all the desirable properties of metal in a spreadable or mouldable paste form, setting, irrespective of thickness, in 30 min. at room temperature. High adhesion to give feathering and a crack-free surface is obtained.

The Metolux action of drying is catalytic, turning the mass into a solid without releasing any part of itself. The filler will not shrink nor expand, but is sufficiently flexible to move with the metal to which it is bonded, being resistant to petrol, vibration, oil, greases, rust and most chemicals.

When Metolux is being used, the metal surface must first be cleaned and left free from rust, grease or moisture. The liquid constituent, which is a synthetic resin binder, is mixed with the metal powder to a stiff paste. It will not stick to the knife, allowing it to be spread smoothly and layered right down to a feather edge when set; the quick hardening process takes place after about seven minutes.

The product can then be worked after about 30 min. according to the temperature. The alloy compound can be machined, ground, and so on, without damaging tools, and painting is carried out using normal techniques.

The price of a standard pack is £2 11s. Further details may be obtained from the distributors in this country, Stedall & Co. Ltd., 164 High Holborn, W.C.1.

Interior Lighting Equipment

ADDITIONS to the manufacturer's range of lighting fittings for interior use are announced. These include fluorescent and tungsten type fittings, the former suitable for stockyards, large buildings and so on, the latter for decorative purposes such as restaurant rooms, and ticket offices.

Industrial trough reflector fittings for 4-ft. and 5-ft. bi-pin fluorescent lamps, are claimed to combine high efficiency and favourable distribution of light with simplicity of construction. Known as the TK series, they are available with plain or slotted reflectors for single or twin lamps and are equipped with the manufacturer's Polyester silent, cool-running, totally enclosed, canned ballasts. Coupling and shielding strips can be supplied for row-

mounting and other mounting arrangements can be made.

The lamps are held by spring-loaded, rotor-type lampholders. The reflector can be removed easily, without the aid of tools, for cleaning.

While open ends are standard, there is provision for the fitting of endplates. Metal-framed Polystyrene louvres are also available for use with these fittings.

Another range is the TM.10 series all-in-one industrial mounting channels for 40-W. and 80-W. fluorescent lamps. These combine all accessories such as the ballasts, starter holders and lampholders, which are pre-wired. The mounting channels are suitable for pendant and surface mounting and they can be used with or without attachments, and placed singly or in rows end to end.

In the range of tungsten bowl fittings for direct/indirect illumination, the bowl is constructed of glass fibre reinforced resin of ivory hue. This material has a smooth, hard surface and good anti-static properties, thereby being rendered simple to keep clean.

Designs include those for suspension mounting and ceiling mounting, both employing 200-W. c.s. pearl lamps, and two wall bracket types, for use with 65-W. or 75-W. b.c. pearl lamps.

Further details, including prices and delivery dates, may be obtained from Philips Electrical Limited, Lighting Division, Century House, Shaftesbury Avenue, W.C.2.

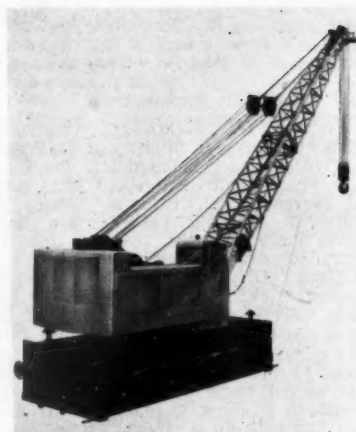
Diesel-Electric Rail Crane

THE latest addition to the Coles range of cranes is a rail-mounted crane model R5010 Samson. It is able to lift 45 tons at a radius of 12 ft. when fitted with a 50-ft. centres jib. The transmission system is diesel-electric, the power plant consisting of a 100-h.p. diesel engine driving a shunt-wound generator, which in turn supplies current to separate motors for each of the four crane motions of hoist, derrick, slew, and travel.

Should the supply of current be interrupted either intentionally or accidentally, automatic electro-mechanical brakes are immediately applied to the crane motions irrespective of any action on the part of the operator.

Control of the crane is effected by one lever for each motion which makes the electrical connection for both directions of any motion. The cab itself may be constructed to suit any type of climatic conditions.

The chassis frame is of robust construction, and is manufactured from arc-welded rolled-steel sections and plates. It is moun-



ted on two 4-wheel bogies, each driven by two electric motors. Alternative buffers are available. A drawhook and chain is also fitted and other items of optional equipment on the chassis include derailling beams and rail clips.

The standard jib is a strut type of lattice construction made in two sections of combined total length 50 ft., which can be extended to 80 ft. by the use of extension pieces. For cranes with twin hoisting drums a 25-ft. fly-jib may be used as a straight extension or swan-neck with a maximum offset of 6 ft. from the centre line of the main jib.

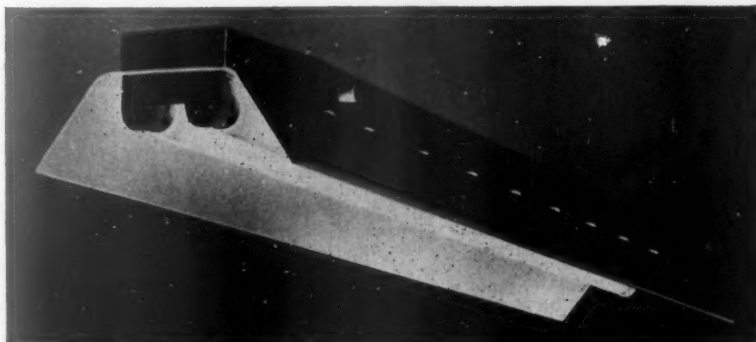
When fitted with standard jib, the R5010 weighs approximately 84 tons and has a shunting capacity of 400 tons when working on a straight level track.

Electrical equipment which is provided includes an electric starter, instrument panel light, two headlamps, two tail lamps, a jib headlamp and cab lamp. Among other equipment is an air-operated windscreen wiper and air horn.

When required, an electro-magnet of up to 50 in. dia. may be fitted and for grabbing duties an assortment of grabs is available with a maximum capacity of 45/36 cu. ft., a spring-loaded tag-line being provided for extra control.

Any tendency to overload is immediately corrected by the Coles B. & A. safe load indicator. Totally enclosed self-resetting limit switches provide an automatic safeguard against overwinding, overlowering and derricking beyond the prescribed limits.

Full details of the R5010 can be obtained from the manufacturer, Steels Engineering Products, Limited, Crown Works, Sunderland.



Ministry of Transport Accident Report

*Newlay & Horsforth, November 22, 1956 ;
British Railways, North Eastern Region*

Colonel D. McMullen, Inspecting Officer of Railways, Ministry of Transport & Civil Aviation, inquired into the accident which occurred at about 10.23 p.m. on November 22, 1956, at Newlay & Horsforth, on the Leeds-Carlisle line, North Eastern Region. (At the time its operation was the responsibility of the Midland Division, London Midland Region.) The 3.20 p.m. special freight train, Carlisle to Leeds, consisting of 10 loose-coupled bogie bolster wagons and 20-ton van, which had been stopped for about 13 min. at the up slow home signal, had moved about 100 yd. when it was overtaken at about 35 m.p.h. by the 4.50 p.m. partially-fitted freight train, also Carlisle to Leeds, travelling under clear signals and consisting of 34 loaded vehicles and van. There was a good deal of damage and debris of the wagons and some of the pipes being conveyed in the first train were piled or thrown about, blocking both slow lines but not the fast, which remained unaffected. Wreckage was cleared and the line reopened by 5.45 a.m. on November 24, but stopping passenger trains could not use the station until the damage to the platform had been repaired. The guard of the first train was killed and the driver and fireman and guard of the overtaking one suffered slight injuries or shock. An ambulance was soon fetched and a doctor living nearby came quickly to the scene. It had been foggy earlier in the evening but conditions had improved and visibility was about 300 yd.

The signalman at Newlay was unaware that the 3.20 train was in the section and the accident arose from serious irregularities committed by him and the signalman at the station in rear, Calverley & Rodley, in the operation of the rotary interlocking block, installed on this line in the time of the former Midland Railway, to which it then belonged. With this apparatus, which has three-position needle indicators, the starting signal at Calverley cannot be cleared until "line clear" has been obtained, after which the handle of the instrument at Newlay cannot be rotated back to the "normal" or "blocked" position except by co-operative use of the "line clear" cancel plungers on both instruments. When the Newlay instrument has been placed to "train on line" its handle is locked until the home signal has been cleared and the train has operated a treadle in advance of it, but if the treadle fails to release the instrument a "train on line" cancel button can be used after breaking a glass cover; this enables the handle to be rotated forward to normal.

An ordinary "line clear" cancel is effected after transmission of the cancelling bell signal, but if the instruments are already at "train on line" when that signal has to be sent the signalman in rear must first inform the one in advance by telephone of the reason for it and the latter signalman must satisfy himself that no mistake has been made before breaking the glass.

The Newlay home signal has a diamond sign indicating that either track circuiting exists or lock-and-block signalling is in force. (There is no berth track circuit here.) Rule 55 stipulates that when a train has been stopped at a signal

equipped with this sign the whistle must be sounded. It is not very clear as regards sections equipped with lock-and-block but the intention is that the fireman shall go to the signalbox if the train is detained for "an unusually long time."

Course of Events and Evidence

A passed fireman was in charge of the engine of the first train and stopped at Newlay home signal at about 10.9. He said he sounded the whistle and the signal was cleared in about 7 to 8 min. He had travelled about 100 yd. when he felt the shock of the collision. He was about to send his fireman to the box when the signal came off; at such signals it was his custom to do that after about 10 min. He did not think he had stood as long as 13 min. but in fact he had.

The colliding train ran through at 10.20, the driver having found the distant and the banner repeater of the home—which forms the platform starting signal—at clear. Curvature prevented him from seeing either rear or side lights of the brake van and he was unaware of the obstruction until the collision. The fireman's view was obstructed by an over-bridge and thereafter he was otherwise engaged.

The signalman at Calverley, of 10 years experience and a relief man since 1953 and 36 years of age, was well acquainted with the rotary instruments. He had under training with him a temporary signalman, aged 42, who had been once on the former L.N.E.R. as signalman for 15 years. He had become re-employed about two weeks before the accident. The signalman was allowing him to work the frame, block and bells, and himself did the booking. The freight train was recorded by him as having been signalled in section to Newlay at 10.2, but he said he was not absolutely certain that the other man had sent the "entering section" signal forward and in fact the instruments were not put to "train on line" but remained standing at "line clear." He looked at the clock and booked 10.7 as the time of receipt of "train out of section" without hearing a bell signal or looking at the instruments. When a telephone call was received from Newlay asking what was in the section on the up slow line he told the temporary signalman to ask whether the last train on it had gone and declared that "he must have got the answer that it had gone because the Newlay signalman asked for a release." He agreed to such being given and, noticing then the indication on the block instrument, thought the Newlay man must have put it at "line clear" by mistake. The cancelling apparatus was then resorted to and the instruments concerned restored to normal. The 4.50 p.m. train was then accepted and "line clear" for it obtained from Newlay, after which all signals were cleared.

This signalman excused himself for his irregular bookings and not looking at the instruments by saying that he had relaxed concentration as "the trainee was working so well and efficiently." He might have entered "train out of section" immediately after recording "entering section," and could not account for his irregular instruction about the "line clear" cancel. He agreed that he should have spoken on the telephone himself. The temporary signal-

man generally confirmed this statement and said he might have forgotten to send "entering section," as he was dealing with an incorrect bell description for a down train. When the telephone enquiry was received he looked at the register and saw "out of section" recorded for the 3.20 train; he therefore told Newlay there was no train on the up slow line. He also assumed the instrument to have been put at "line clear" by mistake and, on instructions from the other man, used the cancel plunger. He thought the rotary block easy to learn but added that there were a lot of extra bell signals.

The signalman at Newlay, aged 21, and a signalman for just over a year, agreed that he gave "line clear" for the 3.20 train but omitted to enter the acceptance in the register, perhaps on account of having to put right a description of a train on the down fast, wrongly described to him. At 10.5 he accepted a parcels train on the up fast and noticed that the up slow instrument was at "line clear." Seeing no corresponding register entry he asked Calverley what he had accepted. The reply was "the parcels train" but he corrected that and after some further remarks and reference to the register thought the signalman at Calverley might have the parcels train confused with the slow line, along which it usually ran, and so asked for a release, as above described. He was definite that "train entering section" had not been received for the 3.20 train; he knew he was acting irregularly in asking for a release and said he ought to have had the line examined. He could not say whether he looked out of the window towards the home signal, but had he done so he must have seen the train headlights. He heard no whistle. Engine-men usually complied with Rule 55 when stopped there. Some came straight to the box and others waited for 4 to 5 min.

Examination of Train Registers

At Colonel McMullen's request the registers of the two boxes were scrutinised closely, one against the other, and compared with those of the boxes on both sides for a month before the accident; a number of irregularities were found. In six of these trains were either omitted altogether or fictitious entries made for trains which did not run; none of these could have been noticed by inspection of an individual book. An irregularity by the signalman at Calverley on November 3 involving wrong signalling and failure to carry out a block regulation could have been detected by examining his book alone. There were 15 cases of trains wrongly described and 36 in which the wrong line had been recorded, with 67 cases of block signals not recorded at all. 53 of which concerned Newlay box, 48 being omissions by the man concerned in this accident to record "train out of section." On a number of occasions signalmen had not signed on and off correctly, in both boxes.

The stationmaster at Newlay had visited the box 23 times in the month and a relief one twice. The former thought this signalman steady and safe and could not account for his actions on the night of the accident. He was astonished at the omissions revealed and said the signalmen had been told "many times" about incorrect signing on and off.

The stationmaster at Calverley said he had no reason to believe the signalman's work was not satisfactory; he had been in the box 33 times in the month, including the day on which the irregularity above mentioned was committed, but had not noticed that nor the incorrect signing, although he visited the box on each occasion the following day.

The district signalman's inspector, seven weeks in that post, had visited most of his 61 boxes but not Calverley or Newlay, and thought that the only irregularity that could be noticed readily when checking registers were omissions to send "out of section." Recording a train on a wrong line was a serious matter; the entry probably had not been made immediately after "is line clear?" had been sent. As regards wrong signing, that wanted "tightening up throughout."

The assistant district signalman's inspector, in that post since February, 1956, spoke about the employment of young signalmen in important boxes. He had been at Newlay three, and at Calverley four times during the previous month and had not noticed the omissions of bell signals from the register. He might have mentioned the irregular signing to the men on the previous turn; otherwise he would have to wait until he could see them. The Chief Inspector at York agreed that the list of irregularities represented an unsatisfactory state of affairs.

Inspecting Officer's Conclusions and Remarks

This rotatory lock-and-block is completely secure against simple forgetfulness but not against misuse. Neither "entering" nor "out of section" was sent for the first train but both signals were falsely recorded, after which the signalman forgot the true situation and, with the man training under him, received from the false entry the impression that the train had passed out of the forward section. The signalman in advance omitted to record the giving of "line clear" and then forgot having done that. Both refused to believe the unmistakable indication of their instruments and jumped to the conclusion it was wrong. The misdeeds of the man at Calverley were the more serious. Presumably he recorded "entering section" without hearing the signal sent and "out of section" automatically immediately after. He realised he was at fault in not dealing with the telephone message; had he done so and discussed the situation fully with the man in advance the mistake would almost certainly have been found. It is difficult to understand how the man at Newlay failed to recollect giving "line clear" when his instrument was indicating he had done so.

Both men realised that the releasing of the instrument was most irregular, and it was inexcusable to teach such malpractices to a man under training. No cancelling signal was sent and no record of a cancellation made. The "line clear" plunger should not have been used and the instruments should have been placed at "train on line" when they could only have been released by the man in advance breaking his glass cover, before doing which he should have received the cancelling signal and satisfied himself there was no mistake. He himself said he should have had the line examined but had he looked out of window he would have seen the train and realised that a mistake had been made. Both men have clear records.

All these irregularities indicated that

the supervision of the block working in these boxes was not good. A very similar accident occurred on December 10, 1956, at Castleton Sidings, between Manchester and Rochdale and indicated a lack of supervision. Some of the present irregularities could have been noticed by checking the individual registers, which undoubtedly should have been more thorough. On the other hand, the more serious ones came to light only after the accident, through the checking specially asked for. In his report on the fatal Irk Valley Junction collision of August 15, 1953 (see our issue of January 1, 1954, page 21), Colonel McMullen expressed the view that closer scrutiny of train registers than had been possible in the past should be applied, particularly at junctions and where the signalmen had limited experience. The British Transport Commission said that stationmasters and inspectors had already had their attention drawn to the instructions in force, while special arrangements were being made where possible to take books out of boxes for examination and the importance of proper scrutiny was being stressed.

Colonel McMullen feels that this had beneficial results but in the district here concerned the registers had not been withdrawn, except perhaps in connection with particular incidents. Cross-checking involves a considerable amount of time and trouble and a full check of all

registers is not only out of the question but quite undesirable. It is recommended, however, that at least a measure of cross-checking should be made in each district as a regular routine.

Where there is track circuiting or lock-and-block, Rule 55 requires the fireman to go to the signalbox after "an unusually long" detention at a signal, in contrast to the 2 min. applying elsewhere, as much for operational reasons as for safety. The driver is not criticised for considering 10 min. reasonable in this case, although his judgment of the interval was faulty; even had he sent his fireman after 10 min. the collision would have still occurred as it would have taken 2 to 3 min. to reach the box.

Colonel McMullen discussed the rule with officers of the B.T.C. who said consideration had been given to defining more precisely the time after which action was required, but it had been found impracticable. The time varied considerably according to circumstances and might do so at the same signal at different times of the day. Drivers familiar with a route would know when 5 min. was unusually long and 15 min. might not be. Colonel McMullen therefore accepts the phrase in the rule "unusually long time" as unavoidable. The rule is, however, long and contains many clauses and the Commission intends to amend it to make it more clear.

Slat Conveyor at Slough

Under the modernisation scheme for the Western Region of British Railways, Slough Goods Depot has been provided with a horizontal slat conveyor, 350 ft. in length between head and tail shaft, for dealing with a daily average of some 110 tons of inwards sundries traffic. This has entailed considerable modifications in the existing shed as well as its extension by 100 ft. The conveyor is powered by a 25-h.p. motor working at 1,000 r.p.m. and is controlled by start and push buttons.

The method of working is that traffic

from three wagons is discharged simultaneously to the slat conveyor and packages are placed thereon with the labels uppermost. Packages are carried by the conveyor, moving at 40 ft. per min., along the cartage front and removed at appropriate cartage berths for checking and direct loading to cartage vehicles.

Succeeding groups of three wagons are drawn to the unloading point by an electrically-controlled capstan and subsequent wagons are dealt with similarly until the whole intake has been completed. Heavy lifts which are beyond the capacity of the conveyor are dealt with by an overhead



Packages travelling along the slat conveyor at Slough goods depot to their appropriate cartage berths

transporter. The use of the conveyor will enable sundries traffic to be handled more expeditiously.

Use of Pallets

The two floors of the warehouse, which are served by a lift, provide extensive storage accommodation and this facility has also been mechanised by the provision of a Matling straddle truck and pallets. Traffic for store is loaded from the slat conveyor direct to pallets and is transferred to the warehouse for stacking by the Straddle truck.

The palletisation of the warehouse will result in the storage space available being increased by some 50 per cent and enables the traffic to be dealt with in unit loads, each consisting of a number of separate packages which it would otherwise be necessary to handle individually.

L.M.R. Manchester-Crewe Electrification Progress

With the completion of the preliminary work of raising bridges on the Mauldeth Road-Wilmslow line, to accommodate overhead electrical equipment, further work has been put in hand on bridges on the London Midland Region main line between Manchester and Crewe.

Six three-span bridges over the line between Crewe and Wilmslow are being partly reconstructed. Their centre arches are being demolished and replaced by new concrete spans giving increased headroom necessary for electrical overhead equipment. Contracts for the raising of seven other bridges have been let. A contract for the reconstruction of nine other bridges on this section of line will be let in September.

Bridge Renewals

Another phase of the modernisation scheme, which is being accelerated in preparation for electrification, involves the renewal of 19 bridges under the line between Manchester and Stockport, and one bridge near Crewe. The most important of these are the bridges over Stockport

Road (between Levenshulme and Longsight), over Hyde Road (between Longsight and London Road, Manchester), and over Chancellor Lane (near London Road Station).

These bridges are not at present suitable for carrying ballasted tracks and are in any case approaching renewal age. It is proposed to reconstruct their superstructures in steel and prestressed concrete and to carry out this work before the lines are electrified to avoid subsequent interference with the new services. To accelerate the rebuilding, standard London Midland bridge drawings have in many cases been supplied to the contractors, leaving only final details to be worked out for each job.

The renewal of the bridge near Crewe has started and work on the bridge over Stockport Road will start shortly.

The task of electrification on the London - Birmingham - Crewe - Liverpool/Manchester main lines is up to schedule. Masts to support the overhead conductor wires have already been erected on much of the distance from Manchester to Crewe.

Prototype L.T.E. Tube Stock with Light-Alloy Bodies

The first of three seven-car prototype trains which will shortly enter service on the Piccadilly Line of London Transport was shown to representatives of the Press on August 12. This was built by the Metropolitan-Cammell Carriage & Wagon Co. Ltd. The three new trains have been manufactured to the design of Mr. A. W. Manser, Chief Mechanical Engineer of London Transport railways, by the Metropolitan-Cammell Carriage & Wagon Co. Ltd., the Gloucester Railway Carriage & Wagon Co. Ltd., and the Birmingham Railway Carriage & Wagon Co. Ltd.

The design of the new cars follows standards incorporated in the 1938 tube stock; the major changes being the use of rubber springing for the bogie bolster and axlebox suspension, the introduction of fluorescent lighting, and the panelling of the cars in unpainted aluminium alloy. Other changes include a new seating

arrangement in the centre of the car where all seats are now transverse, an improved development of retractable shoe gear, a modified Westinghouse electro-pneumatic brake to facilitate maintenance and improve reliability, and a roller blind destination indicator above the centre cab doorway, illuminated by a fluorescent tube. Opportunity has also been taken to try out two new types of motor-driven air compressors, both of which have been specially designed to fit in the very restricted space under a tube car.

Bogie Construction

The design of the bogies closely follows that adopted on two advance prototypes which have given satisfactory service under a 1938 tube stock driving motor car in about 100,000 miles of passenger working on the Piccadilly Line. The system of springing uses rubber in combined shear and compression for both bolster and axlebox suspension and has been developed in collaboration with Metalastik Limited. This system of springing was described in detail in our issue of December 28, 1956.

To a large extent car-body construction follows former practice except for the introduction of unpainted light alloy panelling in lieu of the former standard of red-painted steel sheet, resulting in a saving in weight, a saving in paint, and lower cleaning costs.

Sir John Elliot, Chairman of London Transport, introducing Mr. Manser, said that the new stock was evidence that London Transport was not going to be beaten by what was beating public transport systems all over the world—congestion in the streets and the use of private cars. There were three choices: To go on as they were, continue to lose off-beat traffic and go bankrupt; decrease the standard of service and type of rolling stock throughout to save money—this would be a policy of despair; and do as they were doing and believe that street congestion would drive more and more people underground. They could not, he added run any more trains, but they could provide greater seating capacity, silence and comfort.



Exterior view of London Transport unpainted light-alloy prototype tube train built by the Metropolitan-Cammell Carriage & Wagon Co. Ltd.



Interior of car, showing fluorescent lighting and new seating arrangement

Contracts and Tenders

Diesel locomotive power equipment and rolling stock for British Railways

The British Transport Commission has placed the following contracts as part of British Railways modernisation plan:

The British Thomson-Houston Co. Ltd., Rugby: 10, power equipments of 1,160 h.p. for Type "B" diesel-electric main-line locomotives which, as already authorised, are to be built at Derby Works, London Midland Region, for the Eastern Region of British Railways

Metropolitan-Cammell Carriage & Wagon Co. Ltd., Saltley, Birmingham 8: 41, first class sleeping cars of British Railways standard design with 11 berths; for the Eastern, London Midland, North Eastern and Western Regions of British Railways; five, second class sleeping cars of British Railways standard design with 22 berths; for the Western Region; and 23, composite sleeping cars with five first and 12 second class berths of British Railways standard design for the Eastern, London Midland, North Eastern, Scottish and Western Regions

Metropolitan-Vickers Electrical Co. Ltd., Trafford Park, Manchester: one 6.6-kV. a.c. equipment for an existing three-car train, on the Lancaster-Morecambe—Heysham electrified line of the London Midland Region

Metropolitan-Cammell Carriage & Wagon Co. Ltd., Saltley, Birmingham 8: 150, 14-ton side-tipping ballast wagons for the Eastern, North Eastern and London Midland Regions

Mann, Egerton & Co. Ltd., Norwich: 200, four-ton standard containers, with end and side doors, for general use

Papworth Industries, Papworth Everard, near Cambridge: 200, four-ton standard containers with end and side doors, for general use

Tees Side Bridge & Engineering Works Limited, Middlesbrough: six, 55-ton armour plate wagons for the London Midland Region

The Butterley Co. Ltd., Butterley, near Derby: two, 25-ton well trolley wagons for use in the Eastern and North Eastern Regions

The Derbyshire Carriage & Wagon Co. Ltd., New Whittington, Chesterfield: 15, 25-ton low machine wagons for the London Midland and Southern Regions.

British Transport Commission, South Wales Docks, have placed the following contract:—

Prince of Wales Dry Dock Co. (Swansea) Ltd: repairs to s.h.b. *Foremost* 27, Swansea Docks.

British Railways, London Midland Region, have placed the following contracts:

Fergus Decoration Limited, London, W.1: decorations and furnishings, Chief Officers' Mess, Euston

Henry Tattersall Limited, Rochdale: heating, hot water services, and ventilation, mechanised foundry, locomotive works, Harwich

North Thames Gas Board, Westminster, S.W.1: installation of gas radiant panel heating, wagon repair shop, Devons Road

Hudders & Paynes Limited, Aston, Birmingham 6: general repairs to roofs and renewal of covering, locomotive shed, Aston.

The Special Register Information Service, Export Services Branch, Board of

Trade, has received a call from South Africa for diesel locomotives as follows:—

5 15/16-ton diesel locomotives, for use on construction track of 3 ft. 6 in. gauge, to specification No. A

4 7/8-ton diesel locomotives, for use on construction track of 2 ft. gauge, to specification No. B

The issuing authority is the Stores Department, South African Railways. Bids, in sealed envelopes, endorsed "Tender No. B.6711: Diesel Locomotives for Construction Work," should be addressed to the Chairman of the Tender Board, P.O. Box 7784, Johannesburg. The closing date is September 6, 1957. A copy of the tender documents, specifications and drawings is available for loan to United Kingdom firms on application to the Branch (Lacon House, Theobalds Road, W.C.1.). The reference ESB/19129/57 should be quoted in any correspondence with the Branch.

The Special Register Information Service, Export Services Branch, Board of Trade, has received a call from India for tram line, points, and crossings as follows:—

6 miles tram line suitable for 2 ft. gauge of any section varying from 15 to 24 lbs. including rails, sleepers and fittings

12 sets points and crossings for the above tram line (1 in 4)

The issuing authority is the Director-General of Supplies & Disposals. The tender No. is WP-1/18166-H/I. Bids should be sent to the Director-General of Supplies & Disposals, Shahjahan Road, New Delhi. The closing date is August 21, 1957. A set of tender documents is available for loan to United Kingdom firms on application to the Branch (Lacon House, Theobalds Road, W.C.1.). A photo-copy set can be purchased from the Branch for 13s. Cheques and postal orders should be made payable to the Principal Accountant, Board of Trade. Firms wishing to collect photo-copy sets of tender documents are advised to notify the Branch in advance of their requirements. The reference ESB/18873/57 should be quoted in any correspondence with the Branch.

The Special Register Information Service, Export Services Branch, Board of Trade, has received a call from India for superheater elements as follows:—

105 superheater elements, minor assembly, first row for WM (9,000 series) to Con.Eng.drg. No. E/SL-131/58 (D. G. S. & D. No. 11192), to I.R.S. specification No. R. 32/54 & R 23/51.

The Issuing Authority is the Director General of Supplies and Disposals. The tender No. is P/SW2/18195-H/IV. Bids should be sent to the Director General of Supplies and Disposals, Shahjahan Road, New Delhi. The closing date is August 27, 1957. A set of tender documents and drawings is available for loan to United Kingdom firms on application to the Branch (Lacon House, Theobalds Road, W.C.1.). The reference ESB/19146/57 should be quoted in any correspondence with the Branch.

The Special Register Information Service, Export Services Branch, Board of

Trade, has received a call from Burma for dog spikes as follows:—

50 cwt. dog spikes, 4½ in. × ½ in. with ears. B.S.S.

10 cwt. dog spikes, 4 in. × ½ in. with ears. B.S.S.

The issuing authority and address to which bids should be sent is the Director-General, Union of Burma Purchase Board, St. John's Road, Rangoon. The tender No. is IIIB/499/56-57(H). The closing date is August 20, 1957. A copy of the tender documents is available for loan to United Kingdom firms on application to the Branch (Lacon House, Theobalds Road, W.C.1.). A photo-copy set can be purchased from the Branch for 2s. Cheques and postal orders should be made payable to the Principal Accountant, Board of Trade. Firms wishing to collect photo-copy sets of tender documents are advised to notify the Branch in advance of their requirements. The reference ESB/19036/57 should be quoted in any correspondence with the Branch. (Telephone: Chancery 4411, Extension 738 or 771.).

The Special Register Information Service, Export Services Branch, Board of Trade, reports that the closing date of the call from Australia for locomotive boilers, reported on page 85 of our issue of July 19, 1957, has been postponed to September 12, 1957.

ELECTRIC TRAIN COLLIDES WITH LIGHT ENGINE.—The 12.7 p.m. train from Windsor to Waterloo, an electric eight-car train, collided head-on with a light engine some 200 yd. from Staines station at 12.24 p.m. on August 9. The steam locomotive was turned on to its side across the down track, blocking both lines. The front of the electric train was smashed and part of the roof was ripped away. The collision occurred almost under Knole Green bridge on curving track. Of the nine people admitted to hospital, five were detained, including the driver of the steam locomotive, with a suspected fracture of the leg, and the fireman, with injuries to face and legs. The motorman of the electric train, also detained, had injuries to head and hands.

BRITISH STANDARD FOR FLOWER BOXES.—There have been published five British Standards for various kinds of returnable containers. One of these, B.S. 2636, which deals with carnation/rose boxes, has just been revised and its scope extended to provide for a range of seven returnable wooden boxes for all kinds of flowers. At the present time there are more than 200 different sizes of boxes in use, and flower growers have suffered much inconvenience because the lids of these boxes are seldom interchangeable and because, all too often, "packing sticks" will not fit into the boxes which are being filled. The Standard specifies dimensions, materials, and constructional details for the seven types of box; for two of them alternative depths are provided. As large stocks of boxes are already held it is expected that some considerable time will elapse before the standard boxes are widely adopted. Copies of the Standard may be obtained from the British Standards Institution, Sales Branch, 2, Park Street, London, W.1, price 7s. 6d.

Notes and News

Retired Railway Officers' Society.—The annual autumn luncheon of the Retired Railway Officers' Society, will be held at the May Fair Hotel, on Tuesday, November 5, at 12.30 for 1 p.m.

British Railways Prototype Passenger Coaches.—The name of the sub-contractors for the parcel racks, included in the list on page 104 of our July 26 issue, should have read Deans & Son (Yorkshire) Ltd., and not, as was printed, W. Deans & Son (Yorkshire) Ltd.

Railway Blocked by Landslide in North Wales.—Heavy rain during last weekend caused a landslide which blocked the London Midland Region Chester-Holyhead main line near the Britannia Tubular Bridge over the Menai Strait, on the Caernarvonshire side. Normal running was restored after civil engineering staff had worked overnight to clear the line.

Industrial Truck Combination.—By an agreement operative from July 1 last, Clark Equipment International C.A. has become an equal partner with the Austin Motor Co. Ltd. and Crompton Parkinson Limited in I.T.D. Limited, an established organisation which has been marketing the Stacatruc fork-lift truck and Electricar platform truck. Under this agreement, I.T.D. Limited will have available Clark patents, designs, and technical experience covering a wide range of light and heavy duty fork-lift truck equipment and straddle carriers.

G.E.C. Reduced Dividend Rate.—The annual report of the directors of the General Electric Co. Ltd. recommends that because of inability to foresee immediate relief from the pressure on profit margins and further considerable development expenditure in new fields, it is considered prudent to reduce the dividend on the

increased capital for the year ended March 31. This will be 12½ per cent on £18 million compared with 14 per cent previously paid on £13.7 million. Despite a 10 per cent rise in sales, rising costs were not completely offset and the net profit was reduced from £2,759,417 to £2,397,336. The group's commitments for capital expenditure amounted to £2,096,606 (£2,212,975).

End of Steam Traction in the Netherlands.—In the editorial note in our June 28 issue it was stated that "by the end of next year the steam locomotive will have disappeared from all main-line railways—and, probably from all railways—in Holland." We are now informed that the last steam locomotive will have been withdrawn from service on the Netherlands Railways by the end of the current year.

Kent Coast Electrification Progress.—John Laing & Son Ltd. is the contractor for the civil engineering work on the widening of the Southern Region main line between Rainham and Newington, Kent, in connection with electrification. Taylor Woodrow Construction Limited is the contractor for the Sheerness branch widening, and the Demolition & Construction Co. Ltd. for building the 23 substations. In the article on page 143 of our August 2 issue, the impression may have been given that John Laing & Son Ltd. is carrying out far more work than is actually the case.

New Diesel Trains in Darlington Area.—The North Eastern Region is introducing diesel traction in the Darlington area on August 19, when a number of the existing steam passenger train services between Darlington and Saltburn, Darlington and Crook, and Darlington and Richmond will be taken over by new multiple-unit diesel trains. This is a prelude to the wider introduction, with the new timetable

on September 16, of diesel services on branches in the Darlington area. Until then the diesels will keep to the existing steam train running times.

Train Services in Belgium Interrupted by Storms.—Lightning struck the power station at Haeren, near Brussels, last week, putting out of action for 40 min. the Brussels-Antwerp electrified line. Schaerbeek station was flooded and trains from Antwerp and Liège were unable to reach the capital. A number of international trains had to be diverted.

Fast Run of "Caledonian".—The south-bound "Caledonian" of the Scottish and London Midland Regions on August 7 covered the 401 miles from Glasgow Central to Euston in 387 min., 13 min. less than the schedule of 6 hr. 40 min. The prewar "Coronation Scot" of the L.M.S.R. was allowed 6 hr. 30 min., with a stop at Carlisle. The eight-coach "Caledonian," which also stops at Carlisle, was hauled on this occasion by "Coronation" class locomotive No. 46229, *Duchess of Hamilton*, with an engine crew from Camden Depot.

The "Model Engineer" Exhibition.—At the *Model Engineer* Exhibition, to be held at the New Horticultural Hall, Westminster, S.W.1, on August 21-31, will be shown not only individual models but a number of special items. There will also be commercial exhibits. Among special events will be demonstrations of the Paris Metro model presented to the Queen by the Duke of Cornwall on the occasion of the Royal visit to Paris this year; this model was described on page 7 of our July 5 issue.

School of Welding Technology.—At a press conference at the Institute of Welding, on August 8, Sir Charles Lillicrap, President of the Institute, announced the formation of the School of Welding Technology. Since the closing of the Summer School of Welding, organised by the British Welding Research Association at Ashorne Hill, the Council of the Institute of Welding has undertaken to continue the educational work of the Association in the form of the School of Welding Technology, throughout the year, providing short intensive courses, each dealing with a selected aspect of welding or the application of welding in a single section of engineering production. The prospectus is available from the Institute, 54, Princes Gate, London, S.W.7.

Future of the G.N.R. (I).—According to reports from Northern Ireland and the Republic, operation of the Great Northern Railway is likely to be divided between the Ulster Transport Authority and Coras Iompair Eireann next year, when the future of the railway is reviewed in the light of the end of the first five-year period, on September 30, 1958, of the agreement between the two Governments. As already announced, certain G.N.R. branches in Northern Ireland territory adjoining the Border are to be closed in October whilst all or some of the residual ("stump") G.N.R. lines in the Republic, remaining after the closures in Northern Ireland territory, also are likely to be closed. This will leave the G.N.R. with the Dublin-Belfast main line, the Portadown-Londonderry secondary main line via Omagh, and a few branches in Northern Ireland and the Republic. There is considerable speculation as to the future of both the G.N.R. Portadown-Londonderry

Inspecting a C.T.C. Installation in Rhodesia



Mr. E. W. Dennison, Signal & Telegraph Engineer, Rhodesia Railways, describing the C.T.C. control panel at Mpopoma to delegates to the Conference of General Managers of Railways in Southern Africa (see our June 28 issue). Most of the members of the group are from the South African Railways. Second from the right is Lt.-Colonel H. B. Everard, General Manager, Rhodesia Railways

line and the U.T.A. main line from Belfast to Londonderry via Ballymena and Coleraine.

Sir Brian Robertson Visits the N.E. Region.

—On a recent visit to the North Eastern Region Sir Brian Robertson, Chairman of the British Transport Commission, visited various railway installations and took the opportunity of meeting members of the staff. The accompanying illustration shows him with some of the staff at Harrogate Station. (Left to right): Mr. M. Shearman, checker; Mr. B. Harrison, inspector; Sir Brian Robertson; Mr. A. Jameson, passenger guard; Mr. F. Longbottom, Stationmaster, Harrogate; Mr. C. Birch, District Operating Superintendent, York; Mr. H. A. Short, General Manager, and Mr. A. R. Dunbar, Assistant General Manager, North Eastern Region.

Inquiries into Avignon Accident.—The number of deaths caused by the accident near Avignon on July 19 (see our July 26 issue) was recently stated to be 30, and a number of the injured are still in hospital. Besides the French National Railways administrative inquiry, the conclusions of which, it is understood, will not be published, there is to be a judicial inquiry according to the ordinary rules of the French judicial process: a preliminary examination (instruction), which is held in private, followed by hearings before a magistrate in public, followed by judgment as to criminal responsibility (if any) and the responsibility of the railways towards those who have suffered as a result of the accident—i.e., to award damages.

U.T.A. Charges Increase.—The bus drivers, conductors and certain other road passenger staffs of the Ulster Transport Authority have been granted an increase of 11s. a week, as from July 29, 1957, in settlement of a claim made by the unions on their behalf. This increase is in line with an award made in Great Britain recently to employees of provincial omnibus undertakings. The estimated cost to the Authority of the settlement is £115,000 a year, to which there has to be added further amounts to cover increased costs of material and equipment for the operation of the services. Despite economies already made in working costs the Authority is not in a position to absorb this further increase in its expenditure, and has decided, with reluctance, to increase passenger fares and charges. An increase of some 5 per cent on passenger fares and charges will be introduced from August 19, 1957. The Authority is empowered to make this increase under existing Orders of the Transport Tribunal.

Short Works Courses for Grammar School Boys.—British Railways have arranged a series of short works courses for grammar school boys in the upper forms with the object of providing an opportunity for the boys to become acquainted with industrial life and work to an extent which will assist them in selecting their future careers. One of these courses, for 10 boys, is being held in the Chief Mechanical & Electrical Engineer's and Carriage & Wagon Engineer's Departments in the Eastern Region at Doncaster from August 12 to 16. The programme includes tours of the Doncaster locomotive and carriage and wagon works, Penistone control room, Reddish locomotive depot, and a run in a diesel train, with a visit to the motive power depot and diesel maintenance depot at Lincoln. Lectures and discussions are included in the course, which concludes



Sir Brian Robertson with members of the staff at Harrogate Station, N.E. Region.

with a visit to the various departments of the Chief Mechanical & Electrical Engineer and the Carriage & Wagon Engineer's Headquarters in Doncaster. Complete arrangements are made for the boys as to hotel accommodation and meals.

Rail Facilities for Edinburgh Festival.

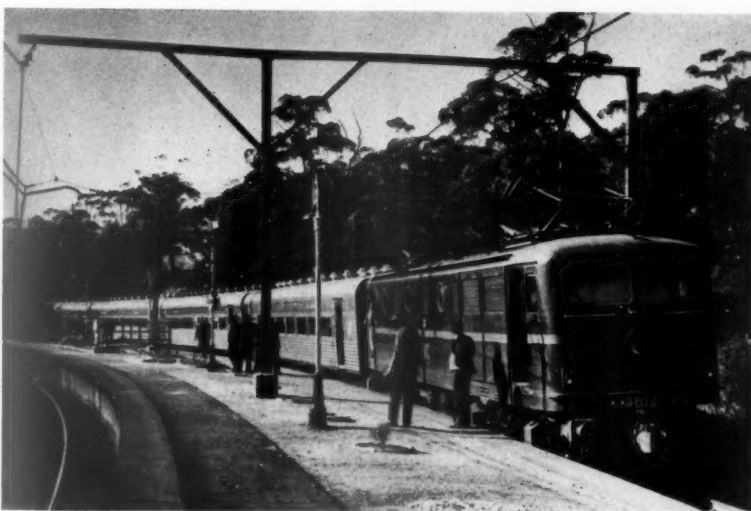
—During the period of the International Festival of Music & Drama, the Scottish Region will provide cheap day and evening excursion facilities to Edinburgh from many places, and there will be special late return trains from Edinburgh to certain stations. Visitors staying in Edinburgh during the Festival period will have a choice of rail outings, including Sunday excursions to Newcastle, Aberdeen, Callander, Glasgow, and the Clyde Coast, and circular tours on weekdays to the Trossachs and Loch Tay. Runabout tickets

giving unlimited rail travel between Edinburgh and Glasgow, Callander, Leven, Hawick, Peebles and various other points are being issued for five-day periods commencing on Mondays, August 19 and 26 or September 2. Seven-day holiday runabout tickets are also issued on any day, covering trips to Dunbar, North Berwick and the Border Country, or to Berwick-upon-Tweed and other East Coast resorts.

London Transport Wren Poster and Booklet.

—The wealth of beautiful buildings left to London by Sir Christopher Wren is featured by London Transport in a new poster. The poster, in colour, is the work of Hans Unger. Between the characteristic shapes of Wren's spires is a facsimile of the architect's signature, "Chr. Wren." With the poster, London Transport has issued a 6d. booklet inten-

Metrovick Electric Locomotives for New South Wales



Passenger train at Woodford, New South Wales, headed by one of the 40 3,820-h.p. 108-ton electric locomotives being built by the Metropolitan-Vickers Electrical Co. Ltd. for the N.S.W.G.R. (see editorial note on page 177)

ded "as a concise guide for the layman to an appreciation of Wren's architectural work in and near London." "No one," the guide states, "has ever made his impress on a great capital city so unmistakably so lastingly and so brilliantly as Wren. London's city skyline is still very much the skyline Wren drew for it . . . and surmounting all is the majesty of the great dome of St. Pauls." The poster and booklet are intended to help visitors and Londoners alike in seeing the sights of the capital this summer. They are guided round the profusion of Wren buildings in the city and also further afield to examples of his work at Chelsea, Hampton Court, Greenwich, Blackheath, and Windsor.

Aircraft Runs on to Railway Track.—At Southend airport on August 13 a Bristol freighter aircraft loaded with three motorcars, and carrying 10 passengers and a crew of three, skidded off the runway as it was landing and broke through the fence of the electrified Liverpool Street-Southend line. The nose of the aircraft stopped within a few feet of the overhead catenary. There were no injuries and the aircraft was only slightly damaged. The train service was not affected.

Collision in Holland.—Two electric passenger trains came into collision on August 12 near Woensel. One was an Eindhoven-Amsterdam train and the other was bound for Maastricht from Amsterdam. At the time of the collision the Amsterdam-Maastricht train is reported to have been travelling at 80 m.p.h. but the Eindhoven-Amsterdam train was moving very slowly. Both trains were crowded with passengers, and five persons are stated to have been killed and at least 24 seriously injured. A preliminary report indicates that wrong-line running was in force at the time, a defect having been discovered in one track.

Forthcoming Meetings

Open currently and until further notice.—

British Transport Commission: Historical Exhibition "Transport Treasures" in Shareholders' Meeting Room, Euston Station, from 10 a.m. to 6 p.m. on weekdays, and 2 to 6 p.m. on Sundays. Admission 6d.

August 18 (Sun).—Railway Correspondence & Travel Society. "The Moonraker" special train to Swindon Works and the Malmesbury Branch, Western Region. Leave Paddington 10.20 a.m.

August 24 (Sat).—Permanent Way Institution, Manchester & Liverpool Section, visit to English Electric Co. Ltd., Preston. Party limited to 30 members.

August 30 (Fri).—to September 8 (Sun.).—Railway Correspondence & Travel Society. Tour of Denmark.

September 3 (Tue.).—Permanent Way Institution, Leeds & Bradford Section, at the British Railways Social & Recreation Club, Ellis Court, Leeds City North Station, at 7 p.m. Paper on "Ballast and formation renewal," illustrated by lantern slides, by Mr. M. F. Barbey, assistant to Engineer (Bridges), North Eastern Region, York.

September 6 (Fri.).—The Railway Club, at 320, High Holborn, London, W.C.1, at 7 p.m. Paper by Mr. T. B. Sands on "Savernake and dis-

trict—a railway crossroads in Wiltshire."

September 10 (Tue.).—Railway Correspondence & Travel Society, East Midlands Branch, at the N.C.S. Guild Room, Toll Street, Nottingham, at 7.30 p.m. "Railway colour photography" shown by Messrs. E. H. Miller, L. Taylor and R. W. Sheppard.

Railway Stock Market

Uncertainty in stock markets has again been reflected in caution by buyers, and values both in the gilt-edged and industrial sections moved slightly lower, though selling generally was moderate. The rising trend of money rates in the U.S.A. has revived talk of a possible increase in the Bank rate, but this is considered unlikely in the City, though it is recognised that there is very little prospect of any reduction in the rate or in the credit squeeze until next year. The measures taken to protect the franc, particularly the subsidy help France is giving to her exports, have drawn renewed attention to the increasing competition in export markets.

Foreign railway stocks held steady, but were without any feature, apart from a further decline in Canadian Pacifics, which were \$68, compared with \$71 a week ago and reflected the effect on dollar stocks of the downward trend on Wall Street. White Pass, however, at \$22½ were only moderately lower on balance.

Mexican Central debentures were 68, and elsewhere, San Paulo Railway 3s. units were quoted at par now they are "ex" the distribution. Chilean Northern first debentures were 41½, while Dorada ordinary stock gained a further point and changed hands around 75.

There was only moderate business in Antofagasta ordinary and preference stocks, which at 33 and 43½ respectively were virtually the same as they were a week ago.

In other directions, Brazil Railway bonds were 6½. International of Central America common shares were quoted at \$30½ and the preferred stock at \$185 xd. Elsewhere, United of Havana income stock was 8½ and the Consolidated stock 2½. In Indian stocks, Barsi were 18½. Nyasaland Railways shares held steady at 12s. 6d. and the 3½ per cent. debentures at 60. Midland of Western Australia stock was again quoted at 7½.

A feature among shares of locomotive builders and engineers has been a good rally in Hurst Nelson to 34s., which compares with 30s. 9d. a week ago. G. D. Peters remained firmly held and quoted at 27s. 6d., but there was a further reaction from 19s. 6d. to 18s. 10½d. in North British Locomotive, while elsewhere, Gloucester Wagon 10s. shares have again changed hands around 16s. and Wagon Repairs at 12s. 10½d. were virtually the same as a week ago. Charles Roberts 5s. shares eased from 11s. 6d. to 11s. Westinghouse strengthened from 37s. to 37s. 3d. Beyer, Peacock 5s. shares eased to 10s.

The recent reaction brought in buyers for Associated Electrical, which rallied from 59s. 3d. to 60s. while General Electric were firmer at 48s. xd and English Electric moved up from 60s. 9d. a week ago to 61s. 3d. Crompton Parkinson 5s. shares were 16s. 4½d. and the 18s. shares of Dowty Group changed hands around 34s. 6d. Pressed Steel 5s. shares firmed

up to 17s. 3d. while British Timken showed firmness at 67s. 9d. and awaiting the annual report, John Brown held steady at 35s. 3d. xd. Babcock & Wilcox have eased to 72s. 6d. and despite higher dividend hopes, T. W. Ward at 80s. 6d. lost part of their recent good advance.

British Aluminium rallied to 60s. "ex rights" to the new shares which were offered at 58s. and are being dealt in at a premium of close on 3s. British Oxygen were 34s. 9d. at which there is a yield of 5½ on last year's 10 per cent dividend which the City is confident should be maintained. Butterley 2s. 6d. shares were 22s. 3d. Following the bid equal to close on £50,000,000 for Dominion Steel & Coal made by A. V. Roe Canada, shares of the Hawker Siddeley Group have been active around 43s. This latest take-over bid emphasises the widening interests of the Hawker Group and its associated, particularly in Canada.

OFFICIAL NOTICES

WORKING FOREMAN GRADE IV (WAGON FITTER) required by EAST AFRICAN RAILWAYS & HARBOURS ADMINISTRATION for one tour of 36 to 45 months in first instance with prospect of permanency. Commencing salary (including Inducement Pay) according to age in scale £363 rising to £968 a year. Outfit Allowance £30. Free passages. Free quarters or an allowance in lieu. Liberal leave on full salary. Candidates preferably under 35 years of age must have served a full apprenticeship as a general carriage and wagon fitter with British Railways or a firm of repute with subsequent experience in Wagon repairs (body structure and underframe including vacuum or Westinghouse brake).—Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience, and quote M2B/42258/RA.

MALAYAN RAILWAY. SIGNAL ENGINEERS. To be responsible for the installation and efficient maintenance of Railway signalling appliances, both electrical and mechanical, and train control and telegraph facilities. Three years' contract appointment, salary range £1,145-£2,378; point of entry depending on experience. Substantial cost-of-living allowance. Contract gratuity of £232 to £324 per annum. Free passages for officer, wife and three children under the age of 12. Quarters, if available, at reasonable rents or housing allowance in lieu. Candidates must be—(a) Corporate Members of the Institution of Electrical Engineers, and Corporate Members of the Institution of Railway Signal Engineers, or (b) hold an engineering degree or diploma recognised as granting exemption from Sections I and II of the A.M.I.E.E. and A.M.I.R.S.E. Examinations and have at least two years' experience in design, installation and maintenance of electrical and mechanical railway signal equipment and of railway telecommunications equipment.—Apply, Director of Recruitment, Colonial Office, S.W.1, giving age, qualifications and experience. Quote BCD 110/23/06.

THE NIGERIAN RAILWAY CORPORATION invites applications for appointment as:

(a) **PERMANENT WAY INSPECTORS.** Applicants must have a sound general knowledge in all branches of Permanent Way Work on a first-class Railway. They should have held the post of Ganger or Sub-Ganger in charge of track maintenance or relaying operations, and have the ability to lay points and crossings. They must also be able to organise and control native labour and be able to prepare requisitions and to check material and stores.

(b) **INSPECTOR OF WORKS.** Applicants must have a sound knowledge and experience of general building construction, including steelwork erection and reinforced concrete work. They must possess a knowledge of simple costing procedure, be capable of setting out works and preparing schedules of material requirements from a plan. They must have the ability to organise and control native labour.

Both appointments may be either in a pensionable post or on contract terms carrying a gratuity of 20 per cent. of the total emoluments in the salary scale of £700-£1,200 plus Overseas pay of £300 per annum. Commencing salary will be according to qualifications and experience. Terms of service provide for tours of fifteen months, seven days full pay leave per month of service, free passages for Officer and wife and separate domicile allowance of £75 per annum each in respect of a maximum of two children while in United Kingdom or cost of passage to and from Nigeria if under 18 years of age. Part furnished quarters provided at low rental, outfit allowance of £60 payable on first appointment. Applications should be addressed to the London Representative, Nigerian Railway Corporation, 11, Manchester Square, London, W.1, giving personal particulars, qualifications and experience.

